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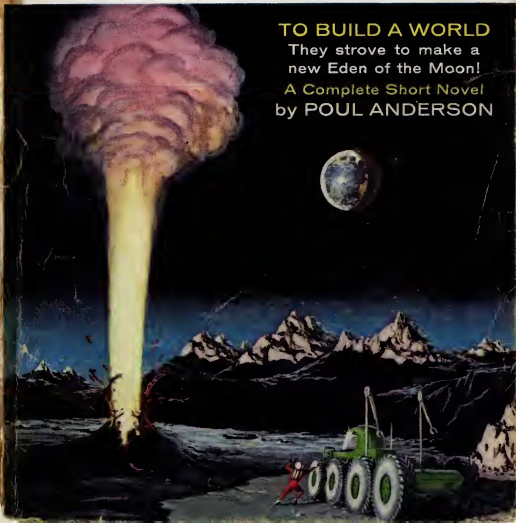
# Galaxy



AN ANCIENT MADNESS by DAMON KNIGHT  
THE MANY DOOMS by HARRY HARRISON  
THE KING OF THE BEASTS by PHILIP JOSE FARMER

## TO BUILD A WORLD

They strove to make a  
new Eden of the Moon!  
A Complete Short Novel  
by POUL ANDERSON

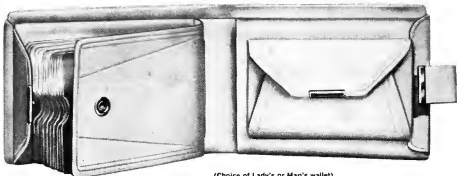


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# Galaxy

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JUNE, 1964 • Vol. 22, No. 5

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# All We Unemployed

A couple of months ago in these pages we discussed the technological revolution called automation, a word which has frightened millions of Americans. As Alexis de Tocqueville wrote more than one hundred years ago —

The majority of the people do not clearly see what they have to gain by a revolution, but they continually and in a thousand ways feel that they might lose by one.

One of the advantages of reading science fiction is that it accustoms one to the long view. Naturally we can see the advantages of automation; they have been spelled out for us by a hundred writers over a period of decades. We know perfectly well that in the long run auto-

mation is what will make our grandchildren as much richer than we as we are than the Elizabethans.

Of course, in the long run — as John Maynard Keynes told Franklin Roosevelt — we are all dead.

What is quite certain in the short run is that automation is going to put a lot of people out of work, and the equally certain corollary of that fact is that they will not like having this happen. It will happen all the same, of course. Competition will see to that. But what are we going to do about millions of damaged lives?

In the event, we should be able to put quite a lot of sugar-coating on the unemployment pill; and as a matter of fact, we have already done so.

*These great minds were Rosicrucians.*

## WHAT SECRET POWER DID THEY POSSESS?



*Benjamin Franklin*



*Isaac Newton*



*Francis Bacon*

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How many unemployed would you guess there are in the United States today? Five or six million, as the census figures indicate?

Not by a long shot! There are at least double that, and maybe far more. Add to those who are out of work and looking for work those who are equally out of work, but aren't looking. The over-65 retired persons. The widows living on insurance or pensions. The divorcees living on alimony. The beneficiaries of stock-retirement plans. Add in a large section of the student population of our colleges and even our high schools; add in, in fact, every man and woman able to work but at present not actually working, whether or not he or she really wants to find a job—for these are as technologically unemployed as any Massachusetts shoemaker. We don't have jobs for them. The difference is simply that they are bought off instead of laid off, by the enormous productive capacity of the 20th century.

And don't forget to add in all the "made" jobs—the composers setting "bogus" type that has no destiny but to be set, proofread, corrected and melted down; the government employees in arsenals and training camps that exist only because a Congressman won't let them be phas-

ed out; add in, in short, everyone whose work performs no real function except to aid in the distribution of our surpluses. These too are as unemployed as any West Virginia miner on the dole; but their dole takes a more attractive form.

And there is probably a lot more of it.

The surplus work force released by automation doesn't have to stagnate on a dole. It can be put to work. Maybe it can even be put to work on things that are worth doing . . . worth doing not because someone can make a profit out of them, or because they enhance a national image, or because Oat-flake County asks for a payroll under a distressed areas bill, but because . . . well, "because they are there."

For that reason, those Congressmen who criticize the space projects because of their tremendous cost—and in the next breath vote funds for a highway that leads from nowhere in particular to nothing at all—have always baffled us.

After all, if we're going to pay people to do jobs that don't really accomplish anything . . . why not hire some of them to help us toward the stars?

—FREDERIK POHL

GALAXY



TO BUILD A WORLD

# **THE KING of the BEASTS**

**BY PHILIP JOSE FARMER**

***Man had exterminated them all  
— now they were being reborn!***

**T**he biologist was showing the distinguished visitor through the zoo and laboratory.

"Our budget," he said, "is too limited to re-create all known extinct species. So we bring to life only the higher animals, the beautiful ones that were wantonly exterminated. I'm trying, as it were, to make up for brutality and stupidity. You might say

that man struck God in the face every time he wiped out a branch of the animal kingdom."

He paused, and they looked across the moats and the force fields. The quagga wheeled and galloped, delight and sun flashing off his flanks. The sea otter poked his humorous whiskers from the water. The gorilla peered from behind bamboo.



Passenger pigeons strutted. A rhinoceros trotted like a dainty battleship. With gentle eyes a giraffe looked at them, then resumed eating leaves.

"There's the dodo. Not beautiful but very droll. And very helpless. Come. I'll show you the re-creation itself."

In the great building, they passed between rows of tall and wide tanks. They could see clearly through the windows and the jelly within.

"Those are African elephant embryos," said the biologist. "We plan to grow a large herd and then release them on the new government preserve."

"You positively radiate," said the distinguished visitor. "You really love the animals, don't you?"

"I love all life."

"Tell me," said the visitor, "where do you get the data for re-creation?"

"Mostly, skeletons and skins from the ancient museums. Excavated books and films that we

succeeded in restoring and then translating. Ah, see those huge eggs? The chicks of the giant moa are growing within them. These, almost ready to be taken from the tank, are tiger cubs. They'll be dangerous when grown but will be confined to the preserve."

The visitor stopped before the last of the tanks.

"Just one?" he said. "What is it?"

"Poor little thing," said the biologist, now sad. "It will be so alone. But I shall give it all the love I have."

"Is it so dangerous?" said the visitor. "Worse than elephants, tigers and bears?"

"I had to get special permission to grow this one," said the biologist. His voice quavered.

The visitor stepped sharply back from the tank. He said, "Then it must be . . . But you wouldn't dare!"

The biologist nodded.

"Yes. It's a man."

— PHILIP JOSE FARMER

## BACK NUMBERS

If you've missed any copies of *Galaxy*, *IF* or *Worlds of Tomorrow* from 1960 to date, our Back Number Department has a limited supply available at 50c each, any three issues for \$1.00, regardless of original cover price. Copies sent postpaid anywhere in U.S. or Canada. Sorry, no copies before 1960 at present available. Send dates and title of issues you wish with remittance to *Galaxy* Publishing Corp., 421 Hudson Street, New York City 10014.

# THE MAN FROM EARTH

BY GORDON R. DICKSON

ILLUSTRATED BY GIUNTA

*You can't execute a man for  
a crime he didn't know he  
was committing — can you?*

The Director of the crossroads world of Duhnbar had no other name, nor needed any; and his handsomeness and majesty were not necessarily according to the standards of the human race. But then, he had never heard of the human race.

He sat in his equivalent of a throne room day by day, while the representatives of a thousand passing races conducted their business below and before the dais on which his great throne chair sat. He enjoyed the feeling of life around him, so he per-

mitted them to be there. He did not like to be directly involved in that life. Therefore none of them looked or spoke in his direction.

Before him, he saw their numbers spread out through a lofty hall. At the far end of the hall, above the lofty portal, was a balcony pierced through to the outside, so that it overlooked not only the hall but the armed guards on the wide steps that approached the building. On this balcony, more members of different races talked and stood.

Next to the Director's chair, on his left, was a shimmering mirror surface suspended in midair, so that by turning his head only slightly he could see himself reflected at full length. Sometimes he looked and saw himself.

But at this moment, now, he looked outward. In his mind's eye, he looked beyond the throne room and the balcony and the steps without. He saw in his imagination all the planetwide city surrounding, and the five other worlds of this solar system, which were the machine shops and granaries of this crown-world of Duhnbar. This world and system he... *ruled* is too mild a word. This world he owned, and wore like a ring on his finger.

All of it, seen in his mind's eye, had the dull tinge of familiarity and sameness.

He moved slightly the index one of his four-jointed fingers, of which he had three, with an opposed thumb on each hand. The male adult of his own race who currently filled a role something like that of chamberlain stepped forward from behind the throne chair. The Director did not look at the Chamberlain, knowing he would be there. The Director's thin lips barely moved in his expressionless, pale green face.

"It has been some moments,"

he said. "Is there still nothing new?"

"Director of Ali," said the low voice of the Chamberlain at his ear. "Since you last asked, there has been nothing on the six worlds which has not happened before. Only the landing here at the throne city of a single alien of a new race. He has passed into the city now, omitting to sacrifice at a purple shrine but otherwise behaving as all behave on your worlds."

"Is there anything new," said the Director, "about his failure to sacrifice?"

"The failure is a common one," said the Chamberlain. "It has been many generations since anyone seriously worshipped at a purple shrine. The sacrifice is a mere custom of our port. Strangers not knowing of it invariably fail to light incense on the cube before the purple."

The Director said nothing immediately. The Chamberlain stood waiting. If he had been left to wait until he collapsed from fatigue or starvation, another would have taken his place.

"Is there a penalty for this?" said the Director at last.

"The penalty," said the Chamberlain, "by ancient rule is death. But for hundreds of years it has been remitted on payment of a small fine."



THE MAN FROM EARTH

The Director turned these words over in his mind.

"There is a value in old customs," he said after a while. "Old customs long fallen into disuse seem almost like something new when they are revived. Let the ancient penalty be reestablished."

"From this transgressor," asked the Chamberlain, "as well as all others after?"

The Director moved his index finger in silent assent and dismissal. The Chamberlain stepped backward and spoke to the under-officers who were always waiting.

The Director, sated with looking out over the hall, turned his gaze slightly to his own seated image in the mirror surface at his left. He saw there an individual a trifle over seven feet in height, seated in a tall, carved chair with ornate armrests. Four-fingered hands lay upon the curved ends of the armrests. The arms, the legs, the body was covered in a slim, simple garment of sky blue. From the neck of the garment emerged a tall and narrow head with lean features, a straight, almost lipless mouth, narrow nose and a greenish, hairless skull. The eyes were golden, enormous and beautiful.

But neither the eyes nor the face showed any expression. The faces of the Chamberlain and the guards and others of the race

sometimes showed expressions. But the Director's face, never. He was several hundreds of years old and would live until some rare accident killed him, or he became weary of life.

He had never known what it was to be sick. He had never known cold, hunger or any discomfort. He had never known fear, hatred, loneliness or love. He watched himself now in the mirror, for he posed an unending enigma to himself — an enigma that alone relieved the boredom of his existence. He did not attempt to investigate the enigma. He only savored it as a connoisseur might savor a fine wine.

The image in the mirror he gazed upon was the image of a being who could find no alternative but to consider himself as a God.

Will Mauston was broken-knuckled and wrinkled about the eyes. The knuckles he had broken on human and alien bones, fighting for what belonged to him. The wrinkles about the eyes had come from the frowning harshness of expression evolved from endless bargains driven. On the infrequent occasions that he got back to Earth to see his wife and two young children, the wrinkles almost disappeared... for a while. But Earth was overcrowded and

the cost of living there was high. He always had to leave again, and the wrinkles always came back. He was twenty-six years old.

He had heard of Duhnbar through a race of interstellar traders called the Kjaka, heavy-bodied, lion-featured and honest. He had assumed there must be such a world, as on Earth in the past there had been ancient cities like Samarkand under Tamerlane, where the great trade route crossed. He had searched and inquired and the Kjakas had told him. Duhnbar was the Samarkand of the stars. One mighty stream of trade flowed out from the highly developed worlds of the galaxy's center and met here with several peripheral routes among the outlying, scattered stars.

Will had come alone and he was the first from Earth to reach it. From this one trip, he could well make enough to retire and not have to leave his family on Earth again. The Kjakas were honest and had taught him the customs of the Duhnbar port. They had sent him to Kahl Dohn, one of their own people on Duhnbar, who would act as Will's agent there. They had forgotten the small matter of the purple shrine. The custom was all but obsolete, the fine was nominal. They had talked of

larger transactions and values.

Passing through the terminal building of the port, Will saw a cube of metal, a purple cloth hanging on the wall above it and small purple slivers that fumed and reeked. He passed at a good distance. Experience had taught him not to involve himself with the religions and customs of peoples he did not know.

Riding across the city in an automated vehicle set for the address of his agent, Will passed a square in which there was what seemed to be a sort of forty-foot high clothespole. What was hung on it, however, were not clothes, but bodies. The bodies were not all of the native race, and he was glad to leave it behind.

He reached the home of the Kjakan agent. It was a pleasant, two story, four-sided structure surrounding an interior courtyard rich with vegetation unknown to Will. He and his host sat on an interior balcony of the second floor overlooking the courtyard, and talked. The agent's name was Kahl Dohn. He ate a narcotic candy particular to his own race and saw that Will was supplied with a pure mixture of distilled water and ethyl alcohol—to which Will added a scotch flavor from one of the small vials he carried at his belt. Will had set up a balance of credit on several Kjakan

worlds. Khal Dohn would buy for him on Duhnbar against that credit.

They were beginning a discussion of what was available on Duhnbar that would be best for Will to purchase, speaking in the stellar lingua franca, the trading language among the stars. Abruptly, they were interrupted by a voice from one of the walls, speaking in a tongue Will did not understand. Khal Dohn listened, answered and turned his heavy, leonine face on Will.

"We must go downstairs," he said.

He led Will back down to the room which led to the street before his home. Waiting there were two of the native race in black, short robes, belted at the waist with silver belts. A black rod showed in a sort of silver pencil-case attached to the belt of each native.

As Will and Khal came down a curving ramp to them, the golden eyes of both natives fastened on Will with mild curiosity.

"Stranger and alien," said one of them in the trade tongue, "you are informed that you are under arrest."

Will looked at them, and opened his mouth. But Khal Dohn was already speaking in the native tongue; and after a little while the natives bowed

shortly and went out. Khal Dohn turned back to Will.

"Did you see in the terminal —" Khal Dohn described the Purple Shrine. Will nodded. "Did you go near it?"

"No," said Will. "I always steer clear of such things, unless I know about them."

Khal Dohn stared at him for a long moment. Below the heavy, rather oriental fold of flesh, his eyes were sad, dark and unreadable to Will.

"I don't understand," he said at last. "But you are my guest, and my duty is to protect you. We'd better go see an acquaintance of mine—one who has more influence here in the throne city than I do."

He led Will out to one of the automated vehicles. On their way to the home of the acquaintance he answered Will's questions by describing the custom of the Purple Shrine.

"—I don't understand," the Kjaka said. "I should have been able to pay your fine to the police and settle it. But they had specific orders to arrest you and take you in."

"Why didn't they, then?" asked Will.

The dark eyes swung and met his own.

"You're my guest," said Khal Dohn. "I've taken on the responsibility of your surrender at the

proper time, while they fulfill my request for the verification of the order to arrest you."

Outside the little vehicle, as they turned into the shadow of a taller building, a coolness seemed to gather about them and reach inside to darken and slow Will's spirits.

"Do you think it's something really important?" he said.

"No," answered Khal Dohn. "No. I'm sure it's all a mistake."

They stopped before a building very like the home of Khal Dohn. Khal led Will up a ramp to a room filled with oversize furniture. From one large chair rose a narrow-bodied, long-handed alien with six fingers to a hand. His face was narrow and horselike. He stood better than seven and half feet, in jacket and trousers of a dark red color. A dagger hung at his belt.

"You are my guest as always, Khal Dohn!" he cried. His voice was strident and high-pitched. He spoke the trade tongue, but he pronounced the Kjakan name of Khal Dohn with a skill Will had not been able to master. "And welcome as the guest of my guest is —" he turned to Will, speaking to Khal — "what is its name —?"

"His name," said Khal, "is Will Mau—" his own, Kjakan tongue failed the English at sound — "Will Mauzzon."

"Welcome," said the tall alien. "I am Avoa. What is it?"

"Something I don't understand." Khal switched to the native tongue of Duhnbar and Will was left out of the conversation. They talked some little while.

"I will check," cried Avoa, finally, breaking back into the trade tongue. "Come tomorrow early, Khal Dohn. Bring it with you."

"Him," said Khal. "I will bring him."

"Of course. Of course. Come together. I'll have news for you then. It can be nothing serious."

Khal and Will left and came back to the balcony above the courtyard of Khal's home. They sat talking. The sunset of the planet spread across the western skyline of the throne city, its light staining the white ceiling above them with a wash of red.

"You're sure it's nothing to worry about?" Will asked the Kjaka.

"I'm sure," Khal Dohn fingered one of his narcotic candies in thick fingers. "They have a strict but fair legal code here. And if there is any misunderstanding, Avoa can resolve it. He has considerable influence. Shall we return to talk of business?"

So they talked as the interior lights came on. Later they ate their different meals together —



Will's from supplies he had brought from his ship — and parted for the night.

It was a comfortable couch in a pleasant, open-balconied room giving on the courtyard below, that Khal assigned Will. But Will found sleep standing off some distance from him. He was a man of action, but here there was no action to be taken. He walked to the balcony and looked down into the courtyard.

Below, the strange plants were dim shapes in the light of a full moon too weak and pale to be the moon of Earth. He wondered how his wife and the two children were. He wondered if, across the light-years of distance, they were thinking of him at this moment, perhaps worrying about him.

He breathed the unfamiliar, tasteless night air and it seemed heavy in his lungs. At his belt was a container of barbiturates, four capsules of seconal. He had never found the need to take one before in all these years between the stars. He took one now, washing it down with the flat, distilled water they had left in this room for him.

He slept soundly after that, without dreams.

When he woke in the morning, he felt better. Khal Dohn seemed to him to be quite

sensible and undisturbed. They rode over to the home of Avoa together; and Will took the opportunity he had neglected before to pump Khal about the city as they rode through it.

When they entered the room where they had met Avoa the day before, the tall alien was dressed in clothing of a lighter, harsher red but seemed the same in all other ways.

"Well," said Will to him, smiling, after they had greeted each other in the trade tongue. "What did you find out the situation is?"

Avoa stared back at him for a moment, then turned and began to speak rapidly to Khal in the native tongue. Khal answered. After a moment they both stopped and looked at Will without speaking.

"What's happened?" said Will. "What is it?"

"I'm sorry," said Khal slowly, in the trade tongue. "It seems that nothing can be done."

Will stared at him. The words he had heard made no sense.

"Nothing can be done?" he said. "About what? What do you mean?"

"I'm sorry," said Khal. "I mean, Avoa can do nothing."

"Nothing?" said Will.

Neither of the aliens answered. They continued to watch him. Suddenly, Avoa shifted his

weight slightly on his long feet, and half-turned toward the doorway of the room.

"I am sorry!" he cried sharply. "Very sorry. But it is a situation out of my control. I can do nothing."

"Why?" burst out Will. He turned on Khal. "What's wrong? You told me their legal system was fair. I didn't know about the shrine!"

"Yes," said Khal. "But this isn't a matter for their law. Their Director has given an order."

"Director?" The word buzzed as deadly and foolishly as a tropical mosquito in Will's ears. "The one on the throne? What's he got to do with it?"

"It was his command," said Avoa suddenly in his strident voice. "The ancient penalty was to be enforced. After he heard about your omission. From now on, newcomers will be warned. They are fair here."

"Fair!" the word broke from between Will's teeth. "What about me? Doesn't this Director know about me? What is he, anyway?"

Khal and Avoa looked at each other, then back at Will.

"These people here," said Khal slowly, "control trade for light-years in every direction. Not because of any virtue in themselves, but because of the accident of their position here

among the stars. They know this — so they need something. A symbol, something to set up, to reassure themselves of their right position."

"In all else, they are reasonable," said Avoa.

"Their symbol," said Khal, "is the Director. They identify with him as being all-powerful, over things in the universe. His slightest whim is obeyed without hesitation. He could order them all to cut their own throats and they would do it, without thinking. But of course he will not. He is not in the least irresponsible. He is sane and of the highest intelligence. But the only law he knows is his own."

Cried Avoa, "He is all but impotent. Ordinarily he does nothing. We interest and amuse him, and he is bored, so he lets us trade here with impunity. But if he does act, there is no appeal. It is a risk we all take. You are not the only one."

"But I've got a wife—" Will broke off suddenly. He had shouted out without thinking in English. They were gazing back at him now without understanding. For a moment a watery film blurred them before his eyes.

The desert-dry wind of a despair blew through him, shriveling his hopes. What did they know of wives and children,

or Earth? He saw their faces clearly now, both alien, one heavy and leonine, one patrician and equine. He thought of his wife again, and the children. Without his income they would be forced to emigrate. A remembrance of the bitter, crude and barren livings of the frontier planets came to his mind like strangling smoke.

"Wait," he said, as Avoa turned to go. Will brought his voice down to a reasonable tone. "There must be someone I can appeal to. Khal Dohn." He turned to the Kjaka. "I'm your guest."

"You are my guest," said Khal. "But I can't protect you against this. It's like a natural, physical force—a great wind, an earthquake against which I would be helpless to protect any guest, or even myself."

He looked at Will with his dark, alien eyes, like the eyes of an intelligent beast.

"Pure chance—the chance of the Director hearing about you and the shrine when he did," said Khal, "has selected you. All those who face the risk of trading among the stars know the chance of death. You must have figured the risk, as a good trader should."

"Not like this—" said Will between his teeth, but Avoa interrupted, turning to leave.

"I must go," he said. "I have appointments on the throne room balcony. Khal Dohn, give it anything that will make these last hours comfortable and my house will supply. You must surrender it before midday to the police."

"No!" Will called after the tall alien. "If nobody else can save me, then I want to see him!"

"Him?" said Khal. Avoa suddenly checked, and slowly turned back.

"The Director." Will looked at both of them. "I'll appeal to him."

Khal and Avoa looked at each other. There was a silence.

"No," said Avoa, finally. "It is never done. No one speaks to him." He seemed about to turn again.

"Wait." It was Khal who spoke this time. Avoa looked sharply at him. Khal met the taller alien's eyes. "Will Mauzzon is my guest."

"It is not my guest," said Avoa.

"I am your guest," said Khal, without emotion.

Avoa stared now at the shorter, heavier-bodied alien. Abruptly he said something sharply in the native tongue.

Khal did not answer. He stood looking at Avoa without moving.

"It is already dead," Avoa said at last slowly, in the trade tongue, glancing at Will, "and being dead can have no further

effect upon the rest of us. You waste your credit with me."

Still Khal neither spoke nor moved. Avoa turned and went out.

"My guest," said Khal, sitting down heavily in one of the over-size chairs of the room, "you have little cause for hope."

After that he sat silent. Will paced the room. Occasionally he glanced at the chronometer on his wrist, adjusted to local time. It showed the equivalent of two and three-quarters hours to noon when the wall chimed and spoke in Avoa's voice.

"You have your audience," said Khal, rising. "I would still advise against hope." He looked with his heavy face and dark eyes at Will. "Worlds can't afford to war against worlds to protect their people, and there is no reason for a Director to change his mind."

He took Will in one of the small automated vehicles to the throne room. Inside the portal, at the steps leading up to the balcony, he left Will.

"I'll wait for you above," Khal said. "Good luck, my guest."

Will turned. At the far end of the room he saw the dais and the Director. He went toward it through the crowd, that at first had hardly noticed him but grew silent and parted before him as

he proceeded, until he could hear in the great and echoing silence of the hall the sound of his own footsteps as he approached the dais, the seated figure and the throne, behind which stood natives with the silver pencil cases and black rods at their silver belts.

He came at last to the edge of the dais and stopped, looking up. Above him, the high greenish skull, the narrow mouth, the golden eyes leaned forward to look down at him; and he saw them profiled in the mirror surface alongside. The profile was no more remote than the living face it mirrored.

Will opened his mouth to speak, but one of the natives behind the throne, wearing the Chamberlain's silver badge, stepped forward as the finger of the Director gestured.

"Wait," said the Chamberlain in the trade tongue. He turned and spoke behind him. Will waited, and the silence stretched out long in the hall. After a while there was movement and two natives appeared, one with a small chair, one with a tube-shaped container of liquid.

"Sit," said the Chamberlain. "Drink. The Director has said it."

Will found himself seated and with the tube in his hand. An odor of alcohol diluted with wa-

ter came to his nostrils; and for a moment a burst of wild laughter trembled inside him. Then he controlled it and sipped from the tube.

"What do you say?" said the Chamberlain.

Will lifted his face to the unchanging face of the Director. Like the unreachable stare of an insect's eyes the great golden orbs regarded him.

"I haven't intentionally committed any crime," said Will.

"The Director," said the Chamberlain, "knows this."

His voice was flat, uninflected. But he seemed to wait. The golden eyes of the throned figure seemed to wait, also watching. Irrationally, Will felt the first small flame of a hope flicker to life within him. His trader's instinct stirred. If they would listen, there must always be a chance.

"I came here on business," he said, "the same sort of business that brings so many. Certainly this world and the trading done on it are tied together. Without Duhnbar there could be no trading place here. And without the trading would Duhnbar and its other sister worlds still be the same?"

He paused, looking upward for some reaction.

"The Director," said the Chamberlain, "is aware of this."

"Certainly, then," said Will, "if the traders here respect the laws and customs of Duhnbar, shouldn't Duhnbar respect the lives of those who come to trade?" He stared at the golden eyes hanging above him, but he could read no difference in them, no response. They seemed to wait still. He took a deep breath. "Death is—"

He stopped. The Director had moved on his throne. He leaned slowly forward until his face hung only a few feet above Will's. He spoke in the trade tongue, in a slow, deep, unexpectedly resonant voice.

"Death," he said, "is the final new experience."

He sat slowly back in his chair. The Chamberlain spoke.

"You will go now," he said.

Will sat staring at him, the tube of alcohol and water still in his grasp.

"You will go," repeated the Chamberlain. "You are free until midday and the moment of your arrest."

Will's head jerked up. He snapped to his feet from the chair.

"Are you all insane?" he shouted at the Chamberlain. "You can't do this sort of thing without an excuse! My people take care of their own—"

He broke off at the sight of the Chamberlain's unmoved face.

He felt suddenly dizzy and nauseated at the pit of his stomach.

Said the Chamberlain, "It is understandable that you do not want to die. You will go now or I will have you taken away."

Something broke inside Will.

It was like the last effort of a man in a race who feels the running man beside him pulling away and tries, but cannot match the pace. Dazedly, dully, he turned. Blindly he walked the first few steps back toward the distant portal.

"Wait."

The Chamberlain's voice turned him around.

"Come back," said the Chamberlain. "The Director will speak."

Numbly he came back. The Director leaned forward once more, until when Will halted their faces were only a few feet apart.

"You will not die," said the Director.

Will stared up at the alien face without understanding. The words rang and reechoed like strange, incomprehensible sounds in his ears.

"You will live," said the Director. "And when I send for you, from time to time, you will come again and talk to me."

Will continued to stare. He felt the smooth, flexible tube of liquid in his right hand, and he

felt it bulge between his fingers as his fingers contracted spasmodically. He opened his lips but no words worked their way past his tight muscles of his throat.

"It is interesting," said the deep and thrilling voice of the Director, as his great, golden eyes looked down at Will, "that you do not understand me. It is interesting to explain myself to you. You give me reasons why you should not die."

"—Reasons?" Between Will's dry lips, the little word slipped huskily out. Miraculously, out of the ashes of his despair, he felt the tiny warmth of a new hope.

"Reasons," said the Director. "You give me reasons. And there are no reasons. There is only me."

The hope flickered and stumbled in its reach for life.

"I will make you understand now," said the deep and measured voice of the Director. "It is I who am responsible for all things that happen here. It is my whim that moves them. There is nothing else."

The golden eyes looked into Will's.

"It was my whim," said the Director, "that the penalty of the shrine's neglect should be imposed once more. Since I had decided so, it was unavoidable that you should die. For when

I decide, all things follow inexorably. There is no other way or thing."

Will stared, the muscles of his neck stiff as an iron brace.

"But then," said the deep voice beneath the glorious eyes, "as you were leaving another desire crossed my mind. That you might interest me again on future occasions."

He paused.

"Once more," he said, "all things followed. If you were to interest me in the future, you could not die. And so you are not to." His eyes held Will's. "And now you understand."

A faint thoughtfulness clouded his golden eyes.

"I have done something with you this day," he said almost to himself, "that I have never done before. It is quite new. I have made you know what you are, in respect to what I am. I have taken a creature not even of my own people and made it understand it has no life or death or reasons of its own, except those my desires desire."

He stopped speaking. But Will still stood, rooted.

"Do not be afraid," said the Director. "I killed you. But I have brought another creature who understands to life in your body. One who will walk this world of mine for many years before he dies."

A sudden brilliance like a sheet of summer lightning flared in Will's head, blinding him. He heard his own voice shouting, in a sound that was rage without meaning. He flung his right arm forward and up as his sight cleared, and saw the liquid in the tube he had held splash itself against the downward-gazing, expressionless face above him, and the container bounce harmlessly from the sky-blue robe below the face.

There was a soundless jerk through all the natives behind the throne. A soundless gasp as if the air had changed. Native hands had flown to the black rods. But there they hung.

The Director had not moved. The watered alcohol dripped slowly from his nose and chin. But his features were unchanged, his hands were still, no finger on either hand stirred.

He continued to gaze at Will. After a long second, Will turned. He was not quite sure what he had done, but something sullen and brave burned redly in him.

He began to walk up the long aisle through the crowd, toward the distant portal. In that whole hall he was the only thing moving. The thousand different traders followed him with their eyes, but otherwise none moved, and no one made a sound. From the

crowd there was silence. From the balcony overlooking, and the steps beyond the entrance, there was silence.

Step by echoing step he walked the long length of the hall and passed through the towering archway into the bright day outside. He made it as far as half-way down the steps before, inside the hall, the Director's finger lifted, the message of that finger was flashed to the ranked guards outside, and the black rods shot him down with flame in the sunlight.

On the balcony above, overlooking those steps, Avoa stirred at last, turning his eyes from what was left of Will and look-

ing down at Khal Dohn beside him.

"What was..." Avoa's voice fumbled and failed. He added, almost humbly. "I am sorry. I do not even know the proper pronoun."

"He," said Khal Dohn, still looking down at the steps.

"He. What did he call himself?" Avoa said. "You told me, but I do not remember. I should have listened, but I did not. What did you say—what was he?"

Khal Dohn lifted his heavy head and looked up at last.

"He was a man," said Khal Dohn.

— GORDON R. DICKSON

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# THE WELL-TRAINED HEROES

BY ARTHUR SELLINGS

ILLUSTRATED BY GAUGHAN

*Getting to the planets may  
not be the big problem —  
maybe the hard part will be  
handling the stay-at-homes!*

## I

The sudden whine underneath them was like the dying song of a motor. But their car, being a linear job, didn't have one. The only motor was far away in the control station, setting up a magnetic beat in the pulse strips laid along the middle of each traffic lane.

The dying fall was in the trac-

tive case — but the effect was the same; as the whine faded through a whimper into silence the car slowed and stopped. Howe pulled on the handbrake.

Pennell looked at the dead pulse meter, then questioningly at Howe. This was only his second assignment — his first with Howe.

Howe's craggy face splintered in a crooked grin.



THE WELL-TRAINED HEROES

"Sign One. Things must be warming up."

"But they sell Linear because they guarantee the power."

"*Through Sleet and Snow and Rain and Hail, The Linear Strip Will Never Fail,*" Howe quoted sardonically. "It hasn't failed. It's *been* failed. Switched off, dear boy."

People said that Howe was a one-time actor. He wasn't the only one in Special Branch to have accreted that aura. It seemed to be the myth of Branch, just as in advertising (where Pennell had started his career). There they regarded themselves all as frustrated Great Writers trapped in the plastic towers of commerce, their wings clipped, wild Byronic collars trimmed to neat button-downs. People must have some pretty rich private fantasies to be in such a crazy set-up as Branch — and a pretty good assortment of reasons.

His own was simple — to get a toehold, however oblique, in the Space Service . . . a reason which he had carefully concealed from the Interview Board eight months ago. They might have thought it the wrongest possible one.

Howe reached into the glove compartment and took out a black watch-sized instrument. He slid back the door and went round behind the car. Pennell

followed him. Howe bent over the pulse strip. It was buried an inch below the molycrrete surface, but the line of filler above it was clearly discernible.

Howe straightened. "I thought so." He crossed the highway to the barrier that divided the two sets of lanes. He straddled it, then kneeled again over the nearest lane — the high-speed one.

Pennell just reached the barrier when he glimpsed something from the corner of his eye. It was red and moving fast.

"Watch out!" he screamed.

Howe reacted instinctively, flinging himself up against the barrier as the red car hurtled past. Pennell caught a glimpse of the driver's face — a fat, frightened one. Then the car was a dwindling spot in the distance.

"Thanks," Howe said nonchalantly, swinging back over the barrier. He dusted down his night-colored uniform with one sleek leather glove. "That confirms it. Power's full on the other strip — going out of Bonfield."

"Then it's already started," Pennell said as they went back to the car. It wasn't a question. Score two out of two, in his limited experience so far, for Special Branch's statistics department. "It's uncanny, the way they get it taped."

"Not so uncanny. Just efficient, blast 'em," Howe answered. "And experienced by now, after three years. Pressure doesn't build up in really small towns — anything under ten thousand population. Towns that size aren't much more than dormitories or stopover places. And in big towns the pressure gets dispersed. People can change their jobs — or even get out. The bigger the city, the more houses are rented. It's the Bonfields of this world that are the danger points. They're just big enough to support some industry. People buy their houses. They've got more ties — and more reasons for feeling trapped."

"I learned a bit about that at Training School."

"Oh, they teach you that now, do they?"

"Only in outline. Just enough to let us know what kind of organization they've got behind the front line. All the same, it's —"

"Uncanny. Yeah, you said that. And all done without having a Man On The Spot — all out of freely available statistics and press reports. It's just knowing what to watch. A creep-up of the juvenile delinquency figures is usually the first sign. That immediately puts a red star on the file. Then — well, all kinds of things . . . a crop of small-time embezzlements . . .

undue demand on the hospital — especially the mental hospital, if the town's got one . . . an upturn in marital dispute cases. If a town gets more than one murder in a short space of time, that really gets the boys busy on their graphs. Various symptoms build up. The graph takes on a familiar shape with a predictable curve. Once that happens — well, that's when we're alerted."

He broke off and gestured to Pennell to change over seats.

Pennell did as he was bid, though he could see no point in it. He said as much to Howe.

"Who goes to ring the breakdown service?"

"Neither of us, my lad." Howe grinned and reached beneath the fascia. A humming started up and mounted to a low drone.

He answered Pennell's look of surprise:

"It happened to me last time out but one. So I took the precaution of having an emergency motor fitted. Branch are thinking of making them standard equipment — just in case this is going to become part of the pattern. Better than getting official screws put on the Linear people. That would be a mite too obtrusive for Branch. Anyway, it's not the Linear company's fault. Their local controller probably has a gun in his back." He nod-

ded at Pennell. "Go on, give it a whirl. That pedal on the right controls the power."

Pennell's foot found it. "I wondered what it was for. Thought it was something to do with the air-conditioning." He pushed it down experimentally, releasing the handbrake.

A handbrake was something you only used on a linear job for parking and emergencies. Driving a linear was even easier than driving an auto-transmission petrol car. You had no worries about vehicles behind you or in front of you. You only had to watch when you switched lanes, Momentum carried you from one pulse strip to another; then you picked up the pulse again — to ride on the crest of a magnetic wave at sixty, ninety or a hundred and twenty miles an hour. Those were the speeds of the lanes, as unvarying as the frequency of an alternating power line, except in smog or snow when they were cut down to whatever safe speed visibility dictated.

But if most of the old thrill of driving had been taken away, there was ample compensation in slashed running and maintenance costs. And there were still plenty of roads left that you could run an ordinary car on if you so wanted.

Pennell put his foot right down

and the car slowly reached a majestic twenty-five.

*"Though all the Linear stations fall, the Howe De Luxe will never stall,"* Howe chanted, parodying the Linear company's slogan. "Well, not for fifty miles, anyway, which is the limit of a Lansen cell. But Bonfield's only twenty miles away now."

They went sedately on their way. It was early morning, a faint mist still masking the day, and there had been little traffic on the roads so far. A couple of cars passed them coming out of Bonfield, and each time the Special Branch men caught a glimpse of mouths dropping in surprise. The sight of a car going at twenty-five along a linear highway must have had all the unreality of a slow-motion film.

For three miles they saw nothing on their side of the highway. Then a utility wagon came hurtling towards them.

"Keep right on," Howe muttered.

The utility driver appeared to have the same idea. But at the last moment he seemed to remember the rule of the road and slewed violently past them, with a screech of brakes. In their rear mirror the two Special Branch men saw it turn in pursuit of them. Which wasn't a hard task; at their speed any ele-

ment of a contest was conspicuously lacking.

The utility pulled alongside them. It held two policemen. The driver flagged them vehemently. Howe leaned out graciously like a grand seigneur bowing and proceeded to hold two fingers up, practically in the nostrils of the other driver. The latter went a shade of purple and wrenched savagely at his steering wheel.

"I think we had better stop, dear boy," Howe murmured. But Pennell had already lifted his foot from the pedal.

The cops climbed out of their wagon and stalked over. One was carrying sergeant's stripes and walked as if they were newly acquired. He stopped by the Branch men's car and pushed his cap back.

"What's the game, mister?"

"I should ask you that, I think," Howe answered suavely.

"Oh, you do, do you? Well, I'm the one who asks the questions round here, and I'm the one who gives the orders. And the order I'm giving you is to follow my wagon to the next turnaround —"

"But that's just the direction we were heading, officer."

"— and head back the way you've come."

"Ah. That we *don't* intend to do."

The other cop — a youngster; Pennell, at twenty-six, could have given him a few years — reached to his hip. The sergeant waved a hand to restrain him, smirking as he did so. He fetched out a notebook, ostentatiously extracted a pencil from its spine and licked the point.

"Right. Which way do you want it?"

"I don't quite get you," Howe countered innocently. "What's on? Some kind of trouble?"

"No," the cop said hastily — a shade too hastily. "It's none of your business."

"But it *is* my business," Howe said sweetly. "Here we were, driving along peacefully, when —"

The sergeant held up a beefy hand. "If that's the way you want to play it —"

The pencil descended and began moving.

"One, failing to obey a signal to stop —"

"Since when has a motorized bull-charge been a signal to stop?"

"Two, driving a non-linear vehicle on a linear highway."

"You can talk! This *is* a linear vehicle. Latest model. And we were driving on the right side of the road, at least."

The sergeant glared at him and went on. "Three, insulting behavior, i.e. making an obscene

gesture to a member of the — " He broke off and turned to his subordinate. "What is it, Hawkins?"

The young cop had been clearing his throat noisily. Now he gestured meaningly towards Howe and Pennell. The sergeant followed his gesture, the look of annoyance on his face shading into puzzlement — until he got the message.

The seats on the latest linear cars were low slung so that not much more than the heads of the occupants were visible. The sergeant had thought they were wearing dark business suits. Now he made out the semi-military cut of their jackets, the comet-tail moulding on the black buttons.

He stepped back and planted his fists on his hips.

"So you're two of *them*, are you? Well, don't think that gives you any privileges in my book."

"I'm sorry to hear you say that," said Howe achingly. Despite the sergeant's words, the uniforms had obviously had a chastening effect on him. Any visitors to Bonfield would be highly unwelcome just now, but that two Spacers should turn up was against all the odds. Infuriatingly so!

"Look," the sergeant said, a note of pleading entering his

voice. "I don't want any more on my plate than I have got. If you want just to go through the town I'll give you an escort."

"Come, come," Howe chided. "Where's your local patriotism? What did the guide book say . . . Bonfield, pop. 12,735, sea-level, set in the midst of the renowned Southchester country . . . ?"

The sergeant looked pained. "I've got my orders."

"And we," said Howe, "have got the freedom of Bonfield." He pulled a slim black book from his pocket. "The Spaceman's Passport. Take a look inside. Skip the somewhat lamentable likeness of myself and concentrate on the reading matter."

"I don't want to know," the sergeant said surlily. "Hold on." He jammed his cap back over his eyes and stalked back to his wagon, where he lifted a microphone.

The youngster craned down over the car and whispered hoarsely to Howe.

"Certainly, dear boy," Howe responded.

"You mean it? *Thanks!*" He thrust his book through the open window, looking back over his shoulder to make sure his sergeant wasn't watching. "Do you mind putting the name of your base underneath?"

"Of course," said Howe, ob-

ling with more alacrity than truthfulness.

"*Marsopolis*," the boy breathed. He added eagerly, "You know, I volunteered for the Spacers, but got turned down. Those tests are tough, ain't they? I —"

The sergeant was returning from the utility. The young cop stuffed his book back in his pocket and straightened hurriedly.

"Okay," the sergeant said heavily. "You've been cleared. You can go through."

"Much obliged," said Howe. He nodded to Pennell, who restarted the motor. "Despite your doubts, officer, I'm sure we shall enjoy our stay."

## II

The road followed a gap in the hills. They came out on the crest of a gentle gradient — and the town of Bonfield stretched beneath them, its nearer houses a scant two miles away.

It looked like most other towns of comparable size. A cluster of taller buildings in the center; to one side a small factory area; around that the gray roofs of the older houses, newer red roofs blocking in the rest. It looked normal and peaceful enough from this distance. But —

"Look," said Howe. Through the lifting heat haze, what could have at first been mistaken for a smoking factory stack could be seen as the charred skeleton of a building, still smoldering after a fire.

"I see," Pennell said slowly. "But listen."

Howe duly listened. "Good for you. That's not the first thing most new agents notice."

Pennell was still listening — and remembering being out with his first-ever girl, walking in the woods high above his hometown in the evening, listening to its voice. It was the voice of a town. A voice that never stopped, but only varied as the wind veered or the stereo theaters turned out; as whatever note, man-made or elemental, turned up on the score. Sometimes, by some freak of orchestration, it would be hushed and a clear single note would make itself heard — a train crying into the distance, a dull cryptic thudding, some voice raised in a never-to-be-known emotion.

He smiled wryly at the memory — not only of the voice but of himself then. And now he was here — a member of a strange force — listening to another voice . . . and knowing that it was *wrong*.

The ground-bass of traffic was missing, for one thing. And the



note of other wheels — those of industry — was as sporadic as an engine missing on several cylinders. The human component was wrong too, ragged and out-of-tune. There was a sense of alarm bells ringing, but he couldn't swear that he actually heard them. But he did hear a siren, for a brief second before it died on a strangled note.

He shivered.

"Check kit," Howe said. He took out his wallet and snapped it open. Pennell followed suit.

"Haemoxin pills," Howe intoned.

"Check."

"Anti-ditto."

"Check."

"Vecol."

"Check."

"Antifax."

"Check."

"Disposal bomb."

"Check." Pennell grinned briefly. "As well as anyone can check it, short of actually using it."

Howe grunted. "We'd better take an antifax now. Just in case they put lie detectors on us. That doesn't often happen, but you never know. Right, let's roll."

A mile on they passed a sign that said *Welcome to Bonfield*. Pennell grimaced, wondering what kind of welcome Bonfield would have for *them*.

They had to wait for that until they had checked the car in at the Linear Station on the outskirts of town — the usual sitting. Several cops were clustered around the place, trying hard to look as if their group presence there was entirely coincidental. But the only person to come running was the green-uniformed controller, who leaped out of his plexiglass control dome as if he had just discovered that it was being pumped full of poison gas.

"May I extend the sincere apologies of the company?" he stuttered. He was a little man with a bald head. The head was glistening more brightly than the temperature warranted. "Any inconvenience to you will be compensated. I assure —"

Howe cut him off with a sweeping gesture.

"No compensation would be adequate for the waste of time my companion and I have suffered. We shall see our lawyers when we get back to civilization."

"I'm sure there will be no need for that," the controller said agitatedly, taking a quick look back over his shoulder. Pennell tracked the glance. Howe had been right. Gun in hand or not, there was certainly somebody else in the dome. He wasn't in police uniform — but neither was he in Linear Service green.

"Be assured that every care will be taken with your vehicle while it is in our charge." The little man semaphored to an overalled service hand.

Howe merely snorted contemptuously and, beckoning to Pennell, strode off.

Only now did the cops move. A couple peeled off and waited for the Space Service men at the exit gates.

"We've been detailed to look after you," one of them said.

"Look after us?" Howe's eyebrows rose in feigned amazement. "Well, remind whoever detailed you that there exists something called the Spaceman's Charter."

"We know," said the cop, a pained expression on his face. "Nobody's stopping you going anywhere. This is just protection."

"Protection? Is your town so badly run that people need protecting?"

The cop made a step towards them as if he'd like to punch their faces in — then obviously thought better of it.

"I see," said Howe. "A bit near the mark, eh? Well, let me give you the exact wording of the Charter on this point." He pulled out his passport and opened it.

"Section one, paragraph three. Inasmuch as any member

of the Space Service, being a citizen of space, is therefore a citizen of all Earth, so he shall be deemed a free man of all countries and of all states, counties, communes or departments of those countries and of all cities, towns or villages and be permitted to pass freely, subject to his abiding by common law, in all such places and over all boundaries and frontiers *without let or hindrance.*"

Howe looked up.

"Briefly, gentlemen, I regard your company — roaring good fellows as you may be — as definitely a let and/or a hindrance. Kindly report back to your chief to that effect — *and let us alone.*"

The two Branch men stalked off. The cops didn't follow.

Howe snickered loudly. "God, they must hate us! You know, I think one must be a bit of a sado-masochist to enjoy this job."

Pennell grinned. "Are you? Do you?"

"That would be telling, dear boy. Let me just say that it fills a space in this old lumber-room of a soul of mine that would otherwise be grievously empty."

They passed a turned-over car, and another that had obviously just been rescued from that condition. Its bodywork a stove-in

ruin, it was being winched onto a breakdown truck. There were few people on the streets, though eyes peered out from the windows of every other house. There was a hush over the town like the hush after a bombardment — half relief, half fear for when the next barrage should start.

A couple of youngsters came out of a side street. They caught sight of the Spacers and jerked excitedly at each other's sleeves. They beckoned furiously over their shoulders and were joined by a dozen more teenagers, boys and girls — though it was a job to tell one from the other in the crewcuts and back slacks and jerkins that both sexes affected. The mob descended on the two Branch men.

"Close ranks," Howe said easily. Pennell didn't feel so easy. They used to tear pop singers apart once, didn't they?

The mob was on them.

"Sign this, *please*."

"Real Spacers! *Boy!*"

"Which planet you from?"

"Kiss me! *Kiss me!*"

Pennell caught a glint of scissors — reaching for a shoulder tab or a lock of his hair. He ducked. Then Howe struck out, his arm flashing in a black arc. His open hand landed, with all

his strength, across the nearest face. It fell back. So did the rest of them — in a sudden vacuum of silence.

The one that Howe had struck sprawled on the ground.

"*Peggy!*" one of the boys said in a shocked voice.

The girl picked herself up, her black pants dusty, one side of her face branded crimson, the rest of it pale. Then, in a way curious to see, her whole face went as red as the slap mark. She turned on her heel and fled sobbing.

"What'd you do that for, mister?" one of the boys blurted.

"I wonder you ask," Howe said curtly. "Look at you! What does it say on your jacket?" He squinted, though the letters were nearly a foot high. "*Spaceman?*" His eyes went round the circle. "*Mars Or Bust? Venus Flight?*" His voice was scathing. "You'd never make space, any of you. You need discipline for our job."

The kids' eyes fell. There was a shuffling of feet.

"Sorry, captain. We've never been so close to a Spacer before."

"And get your ranks right." Howe pointed to his sleeve. "We're only Spacers First Class, not captains."

"*Only!*" one of them said. "That's like saying you're only — well, only the *fifth* Knight of the Round Table!"

"D'you ever hear anyone so modest?" a girl breathed ecstatically.

Howe cursed. He had been in Branch from the start, but he could still make mistakes. Kids had such blasted short memories! They had already forgotten the girl he had slapped. He would have to correct the balance.

"What do you want, anyway?"

"Just — just to be with you," one of the girls said.

"Haven't you Earthworms got anything better to do?"

"Earth . . . worms?" echoed a tall, fair boy. He had a big comet-tail painted across his jerkin.

Howe sneered. "That's what we call you in the Service."

The fair boy's lip drooped. Then he brightened. "But we won't be Earthworms all our lives, will we, fellers?" There was a chorus of assent from his mates. "The Service is getting bigger every day, isn't it, mister?"

"So's the world population, sonny — faster. But we haven't got time to chat on street corners with a bunch of pimply kids."

"Will you come and give a talk at our club?" asked the tall fair boy.

"I strongly doubt it."

"Can we have a button?"

"You certainly may not."

"Well, autographs, then?"

Howe sighed. "All right. Just one."

There was a flurry of movement, but the fair boy already had his book out.

Howe took it. He held it up under his eyes and signed it with a hand that shook violently.

"What's up with him?" one of the boys whispered anxiously to Pennell.

"Planet shakes," Pennell told him. "We all get it."

"But I thought you fellers were supposed to be so fit."

"Sure — we were . . . once." Pennell twitched.

"I — I see," the boy said, edging away. A girl took his place, holding out her bared arm.

"I haven't got a book. Anyway, I'd rather have it on my arm. I won't ever wash it till the day I become a nurse in the Space Service."

Pennell had half a mind to take a haemoxin pill right there and then. The effect would soon dispel any romantic notions she might have about nursing the Brave Boys of the Space Service. But that would have been badly timed; haemoxins had to be reserved for times of maximum effect. He

scrawled illegibly on the girl's arm, pressing harder than he need have. She bit her lip.

He glanced at Howe, who nodded briefly. They detached themselves from the teen-age gaggle and strode towards the town center. The day was getting warmer and gave every threat of being a scorcher.

They halted outside a pub. It was boarded shut.

They sought the next, and found it in what was obviously the old original market square of the town. There was probably, thought Pennell, a Bonfield Society for the Protection of Ancient Buildings. The nineteenth-century houses were immaculately painted, the few shops obviously high-class ones.

Yet that civic pride had cracked. Several windows were broken. One shop front was a gutted ruin. Most of the rest were shut and shuttered. Only a baker's shops was doing business, and that almost furtively. One or two people lounged warily under the trees. The place was hushed.

The two Special Branch men went up to the doors of the pub, the King's Head.

This one had all its glass, but a turnover card in its door said: *Sorry, Closed. Open 10 a. m.* Today it lied, Howe thought. They weren't sorry to be closed

— not today. He looked at his watch. The sign lied twice. It was already half past the hour. He raised his fist and smote the glass panel so hard that Pennell thought it would shatter. But Howe had a longer experience of hammering on bar doors — both on and off duty.

There was a clumping of feet from inside. A voice called out hollowly, "We're shut."

"Under the terms of your license," Howe announced, "you are obliged to afford refreshment to travelers."

A face peered out from the shadows within.

"How do I know you're — "

The landlord had obviously just noticed the uniforms. There was a pause, then bolts slid back. The door opened, on a chain.

"All right, so you're travelers. This place is shut. You can take it up with the police if you've got any objections."

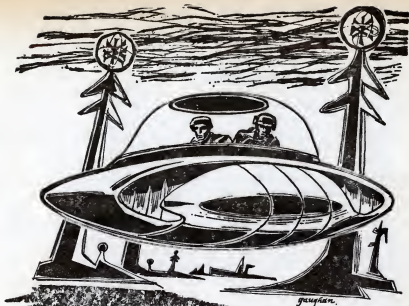
By this time a small crowd had collected behind the two Spacers. Howe was beginning to enjoy himself.

"You mean — the police have closed you up?"

"Of course not. There — there was a bit of trouble in town last night, that's all. Now, if you don't mind — "

But Howe already had one gleaming black boot in the door.

"Was the Riot Act read?"



"Not here it wasn't."

"Anywhere else?"

"Not that I know of."

Which was according to pattern, Howe thought. The local authorities did everything to keep the trouble within ordinary limits. They would block the roads into town; they would censor phone calls out of it. They could gloss over things like that with an excuse of power or mechanical failure. And they would call in every spare cop for miles around. But riot measures, and the final resort — martial law — were things every town this happened to shuddered from.

"Then the police have no legal right to close you."

"I told you, they haven't closed us. They — they just advised all of us to stay shut till things blew over, but they left it to our discretion."

"I see. Do you think it's being — ah, discreet — to keep all these people out?" Howe bent closer to the landlord and whispered, "Would you rather let them in or have them batter their way in?"

The landlord hesitated. "All right. But at the first sign of trouble I'll call the cops."

There would be no need to. Howe looked over his shoulder and was not surprised to see a couple of blue uniforms dispersed through the crowd.

### III

A cheer went up as the lights switched on. The chain rattled free and the doors opened. The landlord made a beeline for his bar-flap to escape the rush. But the procession inside was pretty orderly. There was more rush to slap the Spacers on the back than to get to the bar.

But the drink started to flow. Everybody insisted on treating the two men in black. The two in blue looked on sourly from the doorway. Pennell edged out to the men's room at the first opportunity and swallowed a vecol. That would counter as much alcohol as he could absorb in the next two hours.

He went back to find Howe telling some epic stories of his exploits in space. The audience was lapping it up. But Pennell knew that the repertoire was as carefully scripted as a tri-vee commercial. The story about what happened when Howe was marooned for three weeks in a Venusian ape-peoples' warren was funny, fictitious and pretty disgusting, even for a barroom story. Laugh now, think later. That was the kicker buried in such anecdotes. And Howe was telling them in just the right way — Pennell had to admire his performance — in a voice just too loud, laughing at his own

stories a shade too raucously. He himself joined in, but Howe was the center of attraction right now.

Pennell found himself jostled to the periphery of the crowd. The landlord craned anxiously over the bar.

"Your friend's having a lot to drink."

"He can take it," Pennell told him. He certainly could, with the help of a vecol. "Did you have it bad last night?"

"We didn't. Only a few bottles smashed. But some of the other places in town were wrecked. I don't know what's come over the place. It's normally so peaceful. Nobody's sure just how it started. Some say it was when Johnny Colson came home from failing his Space Service test. He was one of the brightest kids in town. No kid's ever made the Service from Bonfield — and you know how keen they all are."

"Yeah. I know."

"Still, it wasn't kids that did all the damage around town last night. I heard one of my regulars was taken in for murder. He's one of the quietest men I know — that's the funniest thing."

"Funny?"

"Crazy, I mean. That's what it is — crazy. It seems to have been brewing for months. Now suddenly the town's like — I

don't know how to explain it — it's like everyone's been taken over." He shivered and pulled himself together with a visible effort. "My wife says if we have another night like last night she's going to move out. Can't say as I'd blame her, either."

"Let's hope it doesn't come to that," Pennell said — and meant it. He drained his glass. Other glasses around him were empty too. He had noticed that they had been that way for the past ten minutes. The Spacers had been treated royally; now people were waiting to be treated back. Spacers got good money, didn't they? Howe was carefully — but not too carefully — not noticing. Pennell caught his eye and they exchanged a ghost of a wink. It was still noisy in the pub, but it was beginning to sound a bit hollow. Pennell decided it was a good time to leave Howe to it.

He slipped out into the bright sunlight of the square. The news had evidently got around that two Spacers were in town. People came up to him for souvenirs and autographs. He was suitably brusque with them.

He saw a coffee bar open, and went in. The place was full of kids. The hero-worship started immediately, but the clamor was not half so intense as when that first mob of teenagers had en-

gulfed them. Word must have got around about that, too, along the kids' special grapevine. Some of them even looked indifferent. After signing a few autographs, he sorted one of them out, a dark-haired boy who was looking on sullenly from a table by the wall.

"Want my autograph, sonny?" Pennell called out to him.

The boy sneered. Unlike most of the other kids, he was dressed, not in black, but in a striped sweatshirt. He was sitting by himself in the otherwise crowded room.

"Who wants a lousy Spacer's autograph?"

Boos and angry yells were directed at him by the other kids.

"You're looking for a clout round the ear," Pennell told him.

The boy stood up. He wasn't big, but his manner was quietly defiant. A sudden hush fell on the place.

"Who's going to do that small thing?" the boy asked.

Pennell started to move towards him, the crowd falling away in front of him. Then he faltered and stopped.

"I've got better things to do than argue with a kid," he said. He turned away and sat down, snapping his fingers to the waitress for a coffee.

The silence crumbled into a



debris of murmurs. The kids gaped at him as if they couldn't believe their eyes and ears, then whispered to each other. Pennell smiled inwardly. He wondered if old-time stage villains enjoyed getting hissed from the stage. Did they take it simply as a tribute to their performance — or did it secretly gnaw at their vitals?

The waitress came over with his coffee and waited for payment. He let her wait before looking up at her.

"What, do you expect Spacers to pay?"

She glared at him, then shrugged and went away. Another small victory. But not so small, he told himself. She must deal with hundreds of customers in a day. She was one of the *important* people.

He turned to a girl sitting next to him. She couldn't have been more than thirteen; only on the fringe of the coffee bar circle by the look of her.

"What's the name of that kid?" he asked her, to say something, anything. "That cheeky kid who didn't want my autograph."

"Johnny — Johnny Colson," she said in a tiny voice.

That was the kid the landlord of the King's Head had mentioned. He couldn't have picked anyone better. "Still, let's not talk

about a stupid kid like him. Let's talk about us."

The kid looked sideways at him nervously. Pennell put his arm around her. She squirmed under his touch.

"Come on, honey, you're a big girl," he said loudly, pleadingly.

All eyes were on him. The girl was acutely embarrassed.

Someone said, "What's wrong with him?"

"Can't he find women his own age?"

"Is he spooky or something?"

Pennell was tempted, for the second time, to take a haemoxin. But it might have the wrong effect, swing them back into sympathy. Kids were unpredictable. They'd had special classes on kids — and the teacher had wound up by confessing just that.

The girl squirmed free and moved to another table. Pennell was wondering whether to give it another twist when he heard one of the kids say, "I wonder if all Spacers are like that?" and knew that he had achieved enough here.

He got up and strolled to the door. He turned and flung a coin in the direction of the counter. As he did so, he saw that the Colson boy was no longer sitting alone.

The final satisfaction was hearing the clink of the coin

flung back and clattering on the pavement behind him.

He walked back past the King's Head. It was quiet — oddly so after the way he had left it. He looked in. Only a couple of people were holding the bar up. Howe wasn't one of them.

"Where's my friend?" he demanded, taking a step inside.

The landlord glared at him. "The police took him in to cool off. He was trying to start a riot all on his own. Took ten people to get him to the wagon."

"He was always good for ten cops," Pennell said braggingly.

"Only two cops." The landlord's tone was caustic. "The others were my customers. They were glad to help."

*Good for Howe!* Pennell thought. Well, at least he'd know where to find him. But he'd just test results. He started to walk up to the bar.

The landlord lifted one flat hand.

"We don't want your custom, Spacer." He spoke the last word as if it were a dirty one. "I just rang up my lawyer. Maybe I do have to be open to serve travelers, maybe you do have special privileges — though lord knows how characters like you ever got them — but a landlord's still got the right to admit

who he likes . . . and refuse who he don't. And you, your friend and any more of your precious Space Service I don't."

Pennell shrugged and went on his way.

After five minutes he came to the main shopping street of the town. On a normal day it must be pretty busy. Even today there was a fair number of people about. He thought he detected that people weren't so edgy as they had been first thing that morning. Perhaps he was kidding himself. Perhaps people were just recovering from the night's uproar and would have come out in any case.

But word got around. Howe had pried open one pub. Other landlords would have got the message soon enough and opened up too. They would have heard, too, about the fracas at the King's Head, but that was explicable — two Spacers turning up and shouting their mouths off. Something definite, curable, instead of the baffling violence that had erupted the night before.

Pennell slipped a red haemoxin pill in his mouth and gulped it down. He walked on, attracting the usual glances, curious, admiring — but some definitely hostile now.

Then the pill took hold. Violently.

It didn't feel pleasant, and it looked horrible. He started to stagger, cannoning into two or three startled passers-by. His head felt as if it was trying to swell to twice its normal size. He finally collapsed in a heap on the pavement. That last bit was acting. A man under the influence of one haemoxin *could* stay on his feet—but with an effort.

Someone bent over him. He groaned.

"Quick, someone, call an ambulance. This man's ill."

Pennell plucked at the stranger's sleeve.

"No—there's no need for an ambulance." He meant it. He didn't want hospital doctors running around him in circles trying to cure a disease that didn't exist!

"But you look *terribly* ill."

Pennell knew. By now his face must be a bright mauve, with all the capillaries standing out on it as if a madman had scrawled across it for hours with a red ballpoint. Added to that were such personal touches as agents were encouraged to cultivate—in his case a realistic frothing at the mouth and a breathing that sounded like a decrepit rat dragging its way through a cellar full of rusty nails. He'd worked hard on that one.

"It's all right," he gasped. "It's only—only Spacer's sickness."

A crowd had collected. For the second time in his short career Pennell knew what it must be like to be in a car crash . . . people looking at you with a fascinated horror, trying to turn away but being unable to. He clawed at his tunic collar. Hands unbuttoned it for him.

And then he saw a face in the crowd. It seemed to leap out in sudden focus, the rest of the faces blurring away to grayness. It was the kid from the coffee bar—the Colson kid.

*This is all I want*, he thought savagely. The kid wouldn't sort him out now, surely. But after, while there was still a crowd about, he might. And that could have one of two effects, both highly not to be desired. At best, it could turn the crowd from pity to sympathy. There was a big difference. Pity had the required ingredient of contempt. At the worst, it could be the focus of a riot—a *real* riot.

"Just—just prop me against a wall," he murmured. Hands lifted, carried him.

"Give me air."

The crowd stumbled back. There must be hundreds of them. But he couldn't see Johnny Colson's face among

them now. Perhaps he had only imagined it, he told himself. A slight, but unpredictable, halucinogenesis was one of the side-effects of haemoxin.

"I'm sure we ought to call an ambulance," said the man who had first come to his aid.

"No — I've got some pills." He groped inside his tunic and brought out his wallet. Fumbling it open, he took out an anti-haemoxin pill. He swallowed it, and made sure that everyone got a view of the multi-colored array of capsules in the wallet before he folded it shut and stowed it back in his pocket. He heard someone whisper, "See that? He's got a regular medicine chest in there."

"That's better," he said. "I'll get over it in a few minutes."

"How come they keep you in the Space Service if you get turns like this?"

"Huh — that's a good one! They wouldn't be able to run a Space Service if they sacked every man who got the sickness. It's all the gravity changes. Sure, your body adapts, but it always gets back at you."

"Funny. I've read a lot about what it's like out there, but I never read about that."

"Course you don't. D'you think they'd get so many volunteers if they let everybody know about it?"

The man looked suddenly iller than Pennell had felt during the entire episode of his "seizure".

"What's wrong?" Pennell asked him.

"Only that both my boys have volunteered. Course, they haven't got much chance of being taken. All the same . . . I'll have to tell them. That there's a lot they don't know, I mean."

Pennell wasn't going to let him get away as easily as that.

"Hey, don't go round giving people a bad impression of the Service. They give you these pills. As long as you don't make a habit of them, it's all right."

"How do you mean — habit?"

"Perhaps I shouldn't have said that. I mean if you rely on them too much. I know one old-timer — he must be pushing forty — who takes ten a day. Which is all right while it lasts, but of course — "

"Of course *what?*" the man almost screamed now.

"Well, the old heart can't take that kind of thing too long, can it? One day it's *pift* — and out the airlock feet first."

The man gulped.

"I'm okay now," said Pennell. "Help me up." He deliberately didn't frame it as a request. Neither, when he was back on his feet, did he thank the man, but turned away from him as he buttoned up his tunic.

When he turned back the man was gone — home hotfoot to report to his boys, Pennell trusted. Most of the crowd had gone, too. Pennell dusted himself down and went to walk off.

And then he saw him again — the Colson kid, standing across the street, watching him from the shadow of a shop doorway.

#### IV

Pennell let his eyes travel past the boy, telling himself that this was nothing to worry about.

With the crowds gone, any danger was past. If the kid wanted a fight, that was all right by him. It would be a fight he couldn't lose — in more senses than one. He had backed down in the coffee bar. Now if he beat him up, he would earn an equal dividend of disfavor. But the kid would have to start it.

He walked off down the street.

He hadn't gone far before he knew that the kid was following him. He stopped in a shop doorway — the kind of arcade entrance with windows at an angle to the sidewalk. By its reflection he saw the kid, fifty yards behind him, stop too. A good day for window-shoppers, Pennell thought.

He walked on. He came to a supermarket that was open and

went in. It wasn't very full. There was no chance of dodging anyone here. When he came out, the kid was standing across the road, a sardonic smile on his lips.

A cab! That was the answer. But he didn't remember seeing one about the place. There must be one or two in the town, but their drivers had probably taken themselves off the road during the trouble. Perhaps they had been wrecked.

It was no way out, in any case. Bonfield was too small a place to lose yourself in for long. Why did he want to lose himself, anyway? It gave him something to occupy his mind while he wandered round the place. There was nothing much he could do now, except watch and wait. He wasn't experienced enough to be certain, but he could swear that the tension was going out of the town. Which meant his job was nearly done.

All the same, he felt a nagging disquiet. If the kid wanted a fight, why didn't he come up and start one?

He set off again. The kid followed him at the same kind of distance as before, too far away for Pennell to call out to him without attracting attention. If anything *did* start, he must avoid giving any impression that he had picked on the kid.

But after an hour of it, Pennell had had enough. He stopped and turned round to face the kid.

The kid stopped too. He just stood there, in the middle of the sidewalk, his hands hanging easily by his side, the same sardonic smile on his face. Pennell swore under his breath, and took a step towards him. The kid didn't move. But when Pennell started to walk towards him, he turned and walked across the road. He stopped and turned.

Pennell had already stopped. There was no future in *this*. He turned and went on. There was only one answer — he would have to contact Howe. It was about time he bailed him out, anyway. Howe would know to a degree if their mission had succeeded. They could pack up and walk out of this town without worrying about crazy kids or anything else.

He found the police station easily enough. As he walked up the steps to it, he glanced over his shoulder. The kid was still following him. Well, perhaps now, when he saw where Pennell was going, he would have second thoughts.

The desk sergeant looked at him curiously as Pennell entered.

"I believe you have a buddy of mine in charge," Pennell said.

"Not any more. We let him out."

"What?"

"About twenty minutes ago. The chief decided not to charge him. We expected half the town to come demanding his release. Him being a Spacer, I mean. But we didn't get a soul in. He must have made a hell of a nuisance of himself. He certainly did in here."

Pennell felt suddenly disquietened. He needed Howe, and the broken-down ham had to disappear. He felt annoyed at himself for feeling at a loss over such a small matter as the Colson kid. But he did his best to sound unconcerned.

"Well — you know how it is. Back on Earth for leave."

"Yeah, but it must be a hell of a life out there to make a man cut up the way he did. Funny. I dreamed once of getting out there myself." The sergeant looked down at his ample waistline and coughed.

Pennell humored him. "It's a tough life, all right. Not all starlight and roses." He changed the subject. "How are things in town?"

"How d'you mean?"

"I wondered if the chief might be imposing a curfew tonight."

"A curfew?" The sergeant stared at him as if it was a word in Martian. "You must be nuts."

"I just wondered." Pennell felt slightly better. That seemed to confirm his impression that the danger point had been passed. But it still left the small problem of the Colson kid. He looked out of the window. There was no sign of him. But, when he put his face close to the glass and squinted down the street, he cursed. The kid was standing on the corner.

He turned back to the sergeant. "Is there another way out of this place? A back entrance, maybe?"

The sergeant looked at him quizzically. "What, you want to avoid your fans?" He looked out into the empty street and smirked sarcastically. But he came out from behind his desk and showed Pennell along a corridor. He pushed open a door at the end of it.

"Thanks," Pennell said.

He was in a yard. A couple of cops were lounging in a squad car. They looked at him with minimal interest as he turned and went round the building.

He moved quietly and came up to the Colson kid from behind.

"Well, sonny, what do you want?"

The boy turned quickly. But if he was startled, he didn't show it. He merely grinned.

"Just waiting for the next act."

**I**t was Pennell who was startled, and he was sure that he didn't conceal it at all. What did he do now? Try and pass it off, tell the kid to beat it? But if the kid did suspect something that would be fatal.

"Well?" he said, as evenly as he could.

"I've got a cousin in Fenton," the boy went on.

"What's that? A prison?"

"You can lay off the act, mister," the boy said. "This is intermission time. Fenton's a small town up north, about two hundred miles from here. They had some kind of trouble up there, too, about a year ago. My cousin wrote to me about it. He said they had quite a ball while it lasted. My parents come from Fenton, and my uncle sends the local paper on every week. So, the week after, when I get the paper, what do I do? I look for the news splashed all over the front page. And what do I find? *Nothing*. Except, inside, the police court reports just happen to be about three times longer than usual. But scattered through the paper, instead of being in one chunk. And no word about any riots. So I think — either my crummy cousin was dreaming, or else the town council don't like things like that being splashed all over the place. And I would have forgotten all

about it, even when things started to blow up here. I mean, things like that can happen anywhere, I guess. Only — ”

“Only — ?” Pennell said, his mouth dry.

“Only, my cousin also said, in the same letter, that a couple of Spacers had turned up in town. He just put it in a P.S. and I remember I was mad at him, going on about some stupid old riots and leaving the important news till the end — and in a couple of lines. He just said, ‘Two Spacers arrived in town. They were *creeps*.’ I was so mad I wrote him a stinking letter, then I thought that anyone who could write about Spacers like that wasn’t worth wasting time and paper on, so I torn it up.” He looked a bit shame-faced. “I’m telling you the way I felt *then*.”

“And how do you feel now?” Pennell said, quietly.

“It isn’t so much what I feel. It’s what I think.” He looked straight into Pennell’s eyes. “It’s what I *know*.”

There was only one thing for it, Pennell knew now. He would have to find Howe. *Rule Nine. In case of emergency contact the Senior Officer.*

He grabbed the kid’s arm. “You’re coming along with me.”

The boy winced under Pennell’s grip, but he grinned. “Sure,

take me to your leader. But lay off my arm, will you?”

Pennell let go of his arm, but watched him warily. The kid made no attempt to escape. *He’s enjoying this*, Pennell thought vehemently. *He* certainly wasn’t. Only his second assignment, and he had muffed it. He had visions of ruthless top-level action, of agents — *real* agents, the kind with lean jaws and flat pistols — embarking on midnight jets. Of Special Branch toppling in ruins, *all because of him*.

He braced himself. “Come on,” he said to the kid. Where to, he didn’t know. And then he did know, and cursed himself for letting this incident jolt him so badly. *Of course!* He looked at his watch. It was four o’clock. The bars weren’t open for the evening yet. He could hardly picture Howe sitting in some cafe sipping tea. Luckily they were heading the right way. He remembered seeing the place that morning.

Sure enough, Howe was there — in the lounge of the town’s one hotel. He was acting with comforting normality, too — arguing with a white-jacketed waiter at the top of his voice.

As the waiter departed, Howe spotted Pennell and the boy.

“Ah, guests!” He waved them into chairs at his table. “I just gained a victory over that reluctant servitor of Bacchus. At



least, I think I did. I ordered two glasses, too, in the hope you would locate me shortly." He cast an eye at the kid. "To what do we owe the pleasure of this stripling's company, though?"

"I think he'd better tell you himself," Pennell said hollowly.

The boy started talking.

Before very long it was obvious that he knew — that he had worked it out. Pennell watched Howe desperately, but the other's craggy face gave no sign of emotion as the boy's version unfolded.

The boy didn't have all the details, of course. He couldn't have. Nobody, except a few hundred people whose job it was to know, had any idea of how desperate a problem it was.

Man had been in space for fifty years now — *really* in space. First the Moon; soon after, Mars and Venus. On all three he had gained a precarious foothold. A foothold that was maintained only at enormous cost. Rockets alone were expensive enough, but the cost of fuel alone meant that every kilogram of payload cost thousands to transport to the Outpost Planets. There weren't enough things of enough value out there to justify that kind of money.

And men were payload.

There was talk of new drives that would cut transit time and

cost to a fraction . . . but there had been talk like that for decades now. It was still in the verbal stage.

The painful and ironic fact was that there was a bottleneck in space — of all places.

There had been a bottleneck in many other endeavors in man's history. Always somebody had turned up with a means of breaking it. It had happened with the automobile, a rich man's toy until Ford had brought it within the range of every man's pocket — by mass-production. But nobody yet had found a way of mass-producing spaceships. The budgets of the world creaked under the burden. And only ten thousand people were in space or on the planets yet — after fifty years.

And there were nearly five billion people on Earth, most of whom would have given their right arms for the chance to get out there. Space had been plugged too hard for too long by all the interested parties — for scientific, industrial, financial, national or plain personal motives — the image polished too bright. The image called to far more people than the traffic could bear. Frustration had bred a particularly dangerous kind of claustrophobia — one that could, if it got out of hand, become global.

That was how Special Branch had come into being — to tarnish the image at those times that the danger bell rang, when all that bottled-up frustration exploded in violence.

It was an oddball remedy for a tricky problem — but it *worked*. At least, it had so far. It was just a matter of applying the remedy at the right point at the right time, before the situation spread. In that respect it was no different from any other riot situation in history. But this was a recurrent pattern — one that could be plotted.

Special Branch had learned quickly. A team of two had proved to be enough. More created suspicion; there weren't *that* number of spacemen, and only a small fraction of them on Earth at any one time.

"— so I suddenly saw," the boy was saying, "how it was. Just as I've said."

The waiter arrived then with a bottle of scotch and two glasses. "Been distilling it?" Howe asked him sweetly. The waiter glared and departed. Howe smacked his lips, but it was Pennell who grabbed at the bottle. Howe glanced at him chidingly. Pennell's hand shook slightly as he poured out.

There was a long silence.

"Of couse," Howe said at last, beaming over his glass at the

Colson kid, "you know what we have to do now? You're quite right, we *are* agents. But, of course, we can't let people know that. So what will it be? Poison or cold steel?"

The boy blinked nervously. But Pennell had to admire his guts. "So what?" the boy said with only a small tremor in his voice. "You can't keep it a secret for ever. Other people will find out."

"You're quite right," Howe told him. "Other people will. Other people *have*. But not many. And we have our ways of silencing them." He reached in his pocket and pulled out — a pad.

A tear-off pad! Pennell's world started to crumble at the edges. He gaped at Howe.

"What's your name, son?" Howe asked the boy.

"Colson. John Colson."

"Date of birth?"

"Thirty-first of May, two thousand and nine."

Howe filled in the details and handed the pad to the boy, together with his pen.

"Sign this."

The boy stared at the paper, then at Howe, his eyes widening in disbelief. "But — but this is an *enlistment form!*"

"Well, do you want to sign it or not?"

"*Do I!*" He signed it as if

expecting to see it disappear at any moment.

Howe tore a carbon from under the top sheet and handed it over. "Take that to your nearest Space Office." He added dryly, "if you look at the small print, you'll see that it swears you to secrecy about any aspect of the Service. Any aspect."

"Do you think I'd breathe a word to anyone?"

Pennell watched the boy disappear through the revolving doors. He gulped down his drink.

Howe guffawed. "Don't look so surprised! What do you expect the Service to do — atomize him or something?"

"Will they? Is that what it is — a trick?"

"Of course not. Branch are devious, but not *that* devious. He'll start basic training next week."

"But — "

"Now you know why you have to report to your senior officer in emergencies. This is the kind of emergency they mean. As I told the kid just now, it doesn't happen very often. Only fifteen times so far in the three years of Special Branch. Johnny Colson's the sixteenth."

"It's a kind of blackmail," Pennell said slowly. "And Branch pays off."

"If you like. But only because they can afford to. The intake is eight hundred a year, and out of the millions of applications the Service gets, that can't help to be more than slightly random — even taking the cream. So five a year getting in by the back door is neither here nor there."

Pennell felt suddenly indignant. He wanted to get into space too, like those millions of other people. He thought he had played it clever — and all he had got himself into was this weird backwater of a service. And yet this kid had just walked out of here with a precious enlistment paper in his hand!

"That's damn fine way to get recruits," he exploded.

"Funny you should say that," Howe said. "Eleven out of the fifteen passed out of basic training in the highest grade. Two hadn't finished the course the last time I looked at the figures. The other two were only very good. You see, it seems that anybody who does spot just what's going on is possessed of a very rare quality in this mass-produced age — *initiative*. So Johnny Colson had a cousin in a town the same thing happened to, so you think that's lucky, maybe? But most people have heard of these riots by now, even though the towns concerned clam up on them. But most

people don't put two and two together."

"But say a man who's too old for space puts two and two together?"

Howe grinned crookedly. "Well, I hope I don't look too old. I've always rather prided myself on —"

"You mean — you . . .?"

Howe signed reminiscently. "It was a small town — just like Bonfield. Too damned small to have a theater, really. Which probably accounted for the manager decamping with the takings, leaving yours truly flat broke and stranded. But it's all fate, laddy. If the theater hadn't been closed, it would probably have got wrecked when the rioting broke out. But that's another story."

He downed his drink, and laughed. "Johnny worked most

of it out. I wonder whether he worked out the final bit — that neither of us have been in space at all? Perhaps he thinks that we're just seconded to this job for twelve months or something. I can just see him going round when he passes out, trying to find the two men who gave him his big chance! I bet —"

He stopped, seeing the expression on Pennell's face.

"Ah, well, that's all in the realm of conjecture. Here and now we've the best part of a bottle to finish up before we report back for stand-by."

Pennell brought himself back from far distances. "You're darn right we have," he muttered. "You can fill mine up — to the brim."

And this was one time he *wasn't* going to take a vecol.

— ARTHUR SELLINGS

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**BY WILLY LEY**

## **ANYONE ELSE FOR SPACE?**

**I** feel quite sure that many of my readers, after *Mercury* flights, *Vostok* flights, American *Explorer* and Russian *Kosmos* satellites and TV programs via *Telstar* and *Syncom*, have quietly wondered whether the other nations are going to sit back and watch the Russians race the Americans to the moon (or vice

versa) or whether they have space plans of their own.

The answer is that they do, and since items about space ambitions of other nations hardly ever break out of the professional journals—and are fairly rare even in those journals—it may be a good thing to do some reporting. But don't expect any clear-cut time-tables for, say, France, or West Germany or the United Kingdom. They don't exist yet, for a variety of reasons.

One of these reasons is a simple and understandable one: lack of money in large quantities. The other reason is that there is much talk about collaboration between the West-European nations, coupled with a poorly hidden desire to do it independently. Still another reason for the general European uncertainty is the work already done (or in the planning stage) by the USA and the USSR.

This was brought out recently by a blistering editorial in the *Mitteilungen de DGRR*, the monthly reports of the German Society for Rocket Research and Space Travel. This is what the editor wrote:

"Now work has begun in Europe and also in Germany—but work to what purpose? It is a historical fact that—especially in Germany—too few people were

seriously interested in space travel prior to 1961. The large number of those who are new in the business lack general background knowledge as well as proper judgement. This very often has the result that things the Americans are doing *today* are set up as European goals, goals which could not be reached until a number of years has gone by and which, when finally achieved, will by then be obsolete. It does not make much sense, for example, to make plans for a large number of communication satellites in low orbits when it is absolutely certain that by that time a chain of American satellites in the 24-hour orbit will be operational. Nor is there any sense in the plans for a 100 kilogram (220 pounds) instrument package to be soft-landed on the moon in 1972, when both the Americans and the Soviets are planning the same thing for the years 1964 and 1965 and are like to have a permanent manned base on the moon by 1972. So far no European country, nor any of the international European organizations, has offered any project for development *which is not a copy of existing American projects.*"

I don't know whether the editor of the *Mitteilungen* had a discussion with General Walter Dornberger about half a dozen

years ago when he paid a visit to his native country. After his return Dornberger told me that he had been asked to speak to various organizations on the question of what Europe could contribute to the Space Age. His answer had been about as follows: "Just assume that the manned space station is in existence and that a manned flight around the moon had been made. You sit down and think about what should be done afterwards, and then do it."

It was good advice, but apparently it did not penetrate.

**H**owever, the very fact that there are two nations which have advanced far beyond all the others opens another possibility: one of the countries that has not yet done much in the field of space research but feels competent to do so might do it in collaboration with one of the "Big Two". Whether there is any such collaboration between the Soviet Union and one of the smaller countries behind the Iron Curtain is not known, but the western world has produced a number of examples.

There are now two satellites in orbit which are called "international". One of these two was designed and made in England (its name is *Ariel*) while the other was designed and built in Can-

ada (called *Alouette*, French for "Skylark"). Both were fired from the Atlantic Missile Range at Cape Kennedy and carried into orbit by American rockets. The British-built *Ariel*, named by Prime Minister Harold MacMillan after the sprite in Shakespeare's *Tempest*, was put into orbit on April 26, 1962 by a Thor-Delta rocket and is in an orbit which guarantees a lifetime of at least a century; the perigee is 244 miles out and the apogee 760 miles. The orbital period is 101 minutes. The dome-shaped satellite has a diameter of 23 inches and is a little less than 11 inches high. Its purpose is to measure electron density in space (equipment designed by the University of Birmingham) and cosmic ray intensity (equipment by Imperial College, London), and to establish the concentration of ions and electrons near the earth, as well as the intensity of X-rays and ultraviolet rays coming from the sun (equipment by University College, London, and the University of Leicester).

The Canadian *Alouette*, put into orbit on September 28, 1962 by a Thor-Agena B rocket, is heavier than *Ariel*; *Alouette* weighs 320 pounds, *Ariel* only 132 pounds.

*Alouette* looks circular (diameter 42 inches) when seen

## THE CANADIAN BLACK BRANT ROCKETS

	Black Brant I	Black Brant II
Overall length (inches)	292.0	332.0
Nose cone length (inches)	62.3	86.0
Payload space (cubic feet)	4.0	6.2
Burning time (seconds)	20.0	26.0
Thrust (pounds)	20,000.0	16,000.0
Rocket weight, empty, (pounds)	1,758.5	2,095.0
Takeoff, without payload (pounds)	2,492.8	2,782.3

from top and nearly oval (height 34 inches) when seen from the side. It is the satellite with the longest antennas, one 75 feet long and the other 150 feet. The satellite has been dubbed a "topside sounder" since its purpose is to detect cosmic noise and natural radio signals originating in the earth's ionosphere; it reports on such electronic noises from outside; hence its designation. The orbit of *Alouette* can justly be called circular since the perigee distance is 620 miles and the apogee distance 640 miles.

Canada has its own rocket range, located at Fort Churchill, Manitoba, a site originally picked for American high-altitude research rockets (Aerobees and other types) during the International Geophysical Year. The conditions laid down then were that the firing site should be as far to the north as possible and located in a sparsely set-

tled section of the country. To these considerations a third one, of a practical nature, had to be added, namely that the place should be accessible by rail for transporting the rockets and other equipment. Since Fort Churchill was then the northernmost place in Canada that could be reached by rail this site was chosen.

A Canadian rocket now being tested at the Fort Churchill range is called *Black Brant*. The second version of this rocket has carried instrument payloads weighing 150 pounds to altitudes between 150 and 180 miles. The *Black Brant* rockets are solid fuel rockets and the design considerations said, "Reliability first; high payload capacity and high altitude capacity are secondary." *Black Brant III* is going to be a larger version of *Black Brant II*, but *Black Brant IV* will be a two-stage rocket, expected to be able to lift a pay-



load of 250 pounds to around 600 miles.

While the Black Brant rockets are a purely Canadian development which have nothing to do with international cooperation with the USA, there are, of course, also agreements of cooperation between the USA and Canada.

In general the policy of the United States for such international ventures is that no funds will change hands though the USA may supply the rockets in some cases. And the condition is that all the results of such cooperations will be published in scientific journals which are available to any scientist without regard to nationality.

One such scientific cooperation has been going on for some time between the United States and Sweden. The rockets used were American Nike-Cajun solid fuel high altitude sounders as well as American solid fuel ARACS rockets. Launching site was the area of Kronogard, and the main object of the four Nike-Cajun shots was the study of the very high noctilucent clouds. Two were fired while noctilucent clouds were present in the sky and the two others when such clouds were not present. The measurements were made at al-

titudes between 50 and 55 miles and the temperatures at these altitudes were found to be extremely low: *minus* 120° centigrade when no noctilucent clouds were present, and *minus* 143° centigrade when they were present.

Sweden is also going to be the site of a far northern space research range, to be established near the town of Kiruna, which is north of the Arctic Circle. The cost of this range is to be divided among the eleven nations of ESRO (European Space Research Organization) which are: Austria, Belgium, Denmark, France, Germany (West), Great Britain, Italy, Norway, Spain, Sweden and Switzerland. No date has been set for its completion.

Another international rocket range was formally opened with a shot of a Nike-Apache sounding rocket in November, 1963. The name of the site is Thumba, located at the southern tip of India. It is not quite an equatorial range since India does not reach that far south, but it is within less than 10 degrees of the equator. Four Nike-Apache rockets were supplied by NASA, plus a loan of a launcher and photographic equipment, and the Indian personnel was trained by NASA. The Indians supplied the launching site — available

for scientific work by any nation — and the scientific payloads, in this case devices releasing sodium vapors for the investigation of high altitude winds. While the Indian rocket range could not be placed on the geographic equator it is located on the magnetic equator, which is useful for later shots devoted to investigation of the earth's magnetic field.

The most interesting of these joint projects is the Italian San Marco Project, designed to put a satellite into an equatorial orbit.

Some of the existing satellites, mainly American *Explorer* satellites, are said to be in equatorial orbits, but this is a somewhat loose designation, it merely means that the inclination of the satellite's orbit to the equator is small. The San Marco satellite is to be in an equatorial orbit in the strict sense of the word, staying over the equator all the way round. And the simplest way of establishing such an orbit is to shoot due East from a point at the equator. In the San Marco Project this will be done by firing from a towable platform at the equator off Africa's East Coast.

The San Marco Project has three phases, the first being the firing of test satellites (for

checking telemetry and so forth) along sub-orbital trajectories from Wallops Island (off Virginia). A rocket called *Shotput* was used, it is a two-stage all solid fuel rocket with a take-off thrust of 120,000 pounds. The first *Shotput* was fired on April 20, 1963. It was one of those shots which look perfect to the eye, but the telemetry tapes later inform you that it wasn't; in this case the payload kept spinning though it was not supposed to. In the second *Shotput* shot, carried out from Wallops Island on August 2, 1963. the eyes of the observers and the telemetry tapes agreed. It was a perfect shot, carrying the 177.5-pound test satellite to an altitude of 183 miles and 606 miles down-range where it splashed into the Atlantic; no recovery was planned. The first phase of the San Marco Project will close with a third *Shotput* launching from the platform.

But meanwhile the second phase will have been carried out, which is putting a San Marco satellite into orbit by means of a *Scout* rocket, but fired from Wallops Island. This shot will not produce an equatorial orbit but will be a test of the satellite. The third phase, finally, will be the firing of a *Scout* rocket from the towable platform to put a San Marco satellite into an

equatorial orbit. Because of the rocket used and the weight of the satellite it will be a fairly low orbit, with an average distance from the ground of about 200 miles.

Coming to the nations which have built, and are building, rockets without United States aid, one gets into the difficulty that it is not easy to tell whether a specific rocket — no matter what it may be called — is meant for high altitude and ultimately for space research, or whether it is a prototype of a military rocket, or whether a specific rocket shot was just a political gesture.

Israel's *Shavit II* (shavit is Hebrew for "comet") is a case in point. Fired on July 5, 1961, the rocket climbed to a height of 50 miles, releasing sodium vapor at the peak of its flight, but did not carry any scientific instruments. It was announced that it was all solid fuel and "all Israeli-made", but nothing else was said. The launching site was "at the Mediterranean shore", but no location was given. It had either two or three stages. The question of whether there had been a *Shavit I* was not answered. And nothing else has happened since — which leads one to conclude that the rocket most likely was a prototype of a weapon and that that

particular shot was meant to show Nasser that Israel did have rockets.

As for Egypt, it is the only country — aside from the USA — which has directly employed German rocket scientists who did their research during the second World War.

In the years immediately following the war a group of Germans worked in Egypt for the openly announced purpose of developing modern anti-aircraft rockets. By the year 1955 another group of Germans took over, and in July, 1963, the United Arab Republic paraded several missiles. One, an anti-aircraft weapon, was the Russian-made SA-2, radar guided and burning solid fuel. The others were liquid fuel ground to ground missiles, named *Al Zafir* (Victory), *Al Kahir* (Conqueror) and *Al Ared* (Pioneer), the latter one being a two stage missile. It was said at the time that *Al Zafir* and *Al Kahir* had a range of from 300 to 360 miles but that *Al Ared* was yet to be tested.

Only a month later it was announced that *Al Ared* would be made into a three-stage rocket so that it could place a scientific satellite, called "The Star", into orbit. The satellite is also built by Germans working in Cairo under Dr. Hassan Marie,

GALAXY

the chairman of Egypt's Committee for Space Research. Nothing is known so far about the scientific functions of this satellite — its political function is obvious — nor about its intended orbit. But it has been stated that the shot is to be carried out on July 23, 1964, which is the anniversary of the Egyptian revolution which put Gamal Abdel Nasser into power.

Before going on to western Europe a quick look to the Far East, namely Japan, is necessary. The Japanese began their study of high-altitude rockets with a series of tiny rockets called "Pencil". They were hardly larger, though much thicker, than an ordinary pencil. That was in April, 1955. Later in the same year they built a series of rockets called "Baby", which were three and four feet in length, still quite small. Their first real project, in the sense that these rockets were expected to yield scientific data, was called *Kappa*, five inches in diameter and seven to eight feet in length.

*Kappa* rockets were used during the International Geophysical Year, along with *Sigma* rockets which were smaller, weighing only 22 pounds, but were released after balloons had carried them to great heights.

The largest of the *Kappa* roc-

kets, *Kappa 9L*, reached a maximum altitude of 236 miles and fell into the Japan Sea 391 miles from the firing site at Akita, located in the northern portion of Honshu Island's west coast.

After that several things happened. The range of the *Kappa 9L* was almost enough to reach Vladivostok or Olga, on the Asian mainland, which could easily lead to international complications. Hence the Japanese built a new firing site at Kagoshima near the southern end of Kyushu Island, where there is plenty of open sea. Then they sold a number of *Kappa 6* rockets to the Yugoslav Astronomical Association. This rocket is capable of carrying an instrument load of 22 pounds to nearly 40 miles of altitude. Then they started out on the development of *Lambda*, which is a solid fuel booster 25 feet long and about two feet in diameter, capable of producing 42 tons of thrust for 18 seconds. A *Kappa-9* rocket with a *Lambda* booster should be able to put a small satellite into orbit.

In between the Japanese have also entered into an arrangement with NASA which furnished *Nike-Cajun* rockets for ionosphere research. And, in addition to all this, the Japanese have developed a number of military missiles of their own.

One is the TLRM, a two-stage anti-aircraft missile looking somewhat like our *Nike-Hercules*, while the other, the XAAM-A-3, could be called the Japanese version of the *Side-winder* missile, an air to air weapon, equipped with an infra-red homing device.

Among the west European countries the one with the most clearcut space program is France. It is a little known fact that one of France's aviation pioneers, Robert Esnault-Pelterie, was working on the design of a high altitude rocket during the years from 1935 to 1939.

The outbreak of the second World War prevented Esnault-Pelterie from finishing his rocket. German rocket experts who saw it have expressed the opinion that it could easily have reached the design altitude of 60 miles; if the second World War had started a year later we would now consider the high-altitude sounding rocket a French invention. And after the war the French were the first west European nation to come up with a liquid fuel research rocket of their own, the *Veronique*.

If I did not have the word of Prof. E. Vassy of the University of Paris that the design was derived from that of the V-2, I would have thought that it was

an updated version of Esnault-Pelterie's rocket, *Veronique*, 24 feet tall and with a diameter of 21.5 inches, burned Diesel oil with nitric acid. Its empty weight was 772 pounds, take-off weight 2200 pounds, the highest altitude reached by the first series of *Veronique* rockets — on February 21, 1964 — was 84 miles. The second series saw a change in fuel, turpentine was substituted for Diesel oil with a fifty per cent increase in altitude.

French plans comprise the development of three high-altitude rockets, a guided (and larger) *Veronique*, *Vesta* and *Rubis*, the development of a French satellite (simply called FR. 1) and the launching of at least two FR. 1 satellites, one by means of a NASA *Scout* and one by a French *Diamant* rocket, which is 66 feet long with a liquid fuel first stage and solid fuel upper stages. But in spite of the intensive work carried on, the French intend to participate in European space work, in the ESRO (European Space Research Organization) as well as the ELDO (European Launcher Development Organization). General Robert Aubiniere, director of the *Centre National d'Etudes Spatiales*, stated: "France feels that space research should be planned on a European basis. This concentration of

## FRENCH RESEARCH ROCKETS, OPERATIONAL AND UNDER DEVELOPMENT

Name	Propellant	Number of stages	Payload (lbs.)	Altitude (miles)
Belier (Ram)	solid	1	66	56
Centaure	solid	2	66	106
Dragon	solid	2	66	344
Emma				
(weather rocket)	solid	2	4.5	44
Veronique	liquid	1	132	125
Aigle	solid	1	220	106
Eridan				
(second stage is Aigle)	solid	2	220	220
Veronique (guided)	liquid	1	220	220
Vesta	liquid	1	44	312
Rubis	solid	2	132	1250

The figures for the performances of the guided Veronique, Vesta and Rubis are the design figures; for the other rockets these are actual performance figures.

effort should allow Europe to recover its past scientific and technical primacy."

Moving across the Channel to Great Britain we find a country which has an extensive missile range, at Woomera in Australia, at its disposal and which has developed quite a number of smaller missiles, most of them anti-aircraft — but which has been curiously lagging, in spite of some promising beginnings, in the development of large rockets.

These beginnings were two rockets named *Black Knight* and *Blue Streak*. The *Black Knight* rocket is about 35 feet tall, with a diameter of 3 feet, and was built by Saunders-Roe in collaboration with the Royal Air-

craft Establishment. It is powered by a Bristol Siddeley Gamma-2 rocket engine, burning kerosene with concentrated hydrogen peroxide. Its four thrust chambers produce a take off thrust of 16,400 pounds at sea level, which thrust increases to about 19,000 pounds in a vacuum. The *Black Knight* has been used successfully on the Woomera range for the testing of re-entry nose cones and has carried such nose cones as high as 500 miles. Since the height of the nose cones has been kept secret it is impossible to judge how well the *Black Knight* would do as an instrument carrying sounding rocket for very high altitudes.

The other big British rocket was the *Blue Streak*, developed

originally as an intermediate range (say 1500 miles) ballistic missile. The word "was" is due to the fact that, to everybody's surprise, the British Government cancelled the *Blue Streak* as a missile in April, 1960. But the rocket exists, built by de Havilland, powered by two Rolls-Royce RZ-2 rocket engines of 137,000 pounds thrust each, burning kerosene with liquid oxygen. The diameter of the rocket is 10 feet, the overall length, including the engines, is 61 feet 6 inches. Since the cancellation of the *Blue Streak* as a missile removed much of the secrecy attached to it, British rocket enthusiasts suggested using a *Black Knight* as a second stage for a *Blue Streak* for the orbiting of a British satellite. The Ministry of Supplies did not reply to this suggestion at all and the British satellite was orbited by an American rocket. But late in 1960 the British Government offered the *Blue Streak* to France, for possible use as the first stage of a joint European space rocket.

And it is this fact which brings us to West Germany — for the West Germans think a great deal in terms of a European satellite carrier.

Though the Germans made the big jump from experimental small rockets to the

operational V-2 during the second World War, they were then cut off from rocketry for a long time. They were so much cut off, as a matter of fact, that the *Deutsches Museum* in Munich, when it planned a Hall of Space, had to get a V-2 from the United States in order to make their exhibit.

What happened was quite simple, of course. The whole research and planning staff of the Peenemunde rocket research center came to the United States. A few others, like Dr. Eugen Sanger and Dr. Irene Bredt (later Mrs. Sanger) worked for the French for a while. A few of the younger men went to Egypt and others were old enough to retire. And a number of rocket experts who had worked in various factories during the war later followed the trail to the United States and joined the men from Peenemunde.

In addition to losing all the experts, Germany was a defeated and occupied country for a number of years, not sovereign and therefore not free to engage in research which might be interpreted as military. The combination of all these circumstances meant that the Germans entered the active space age later than anybody else. And when Dr. Sanger returned to Germany to take over the post of director

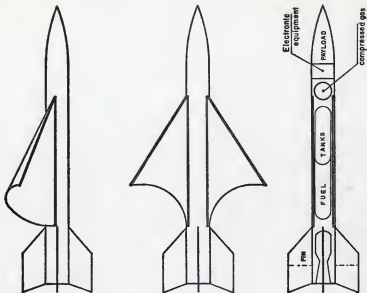


Fig. 1 Preliminary design sketch of a West German High-Altitude research rocket with flex wing for recovery and re-use.

of research, he refrained from building rocket engines which would have been a duplication of other rocket engines, and concentrated on ramjets and theoretical work.

But now the Germans want to do something. They have spent a great deal of thought on the design of a satellite which is expected to be quite heavy (weight around 1.5 tons) but also quite

versatile, capable of being used as a communications satellite, a meteorological satellite and a geodetic satellite. Since other satellite designs have progressed quite far, it may be doubted whether this design will ever be actually built.

On the other hand a German design for a high altitude sounding rocket which is recoverable and reusable (see Fig. 1) may



well be built. The final size of this rocket has not yet been determined, since it obviously can be built in various sizes; the preliminary design sketch has a peak altitude of 80 miles as the basis for all calculations.

Another German design is concerned with a satellite-carrying rocket for the ELDO organization. The first stage of this design is the British *Blue Streak*. The French have offered to build the second stage and the Germans would like to tackle the third stage which, because of the carrying capacity of the two lower stages, must not weigh over 10,000 pounds. Because of this restriction they have high energy fuels in mind, either liquid hydrogen with liquid oxygen, like the American *Centaur*, or, if at all possible, liquid hydrogen with liquid fluorine.

Personally I feel that it will be hydrogen and oxygen. Hydrogen is a fuel which offers many problems. But as the American *Centaur* flight has shown, these problems can be overcome and hydrogen is only explosive but neither toxic nor corrosive, while fluorine is the most difficult of all elements to handle. And the advantages of using fluorine are not very great.

I have in front of me a tabulation of the German calculations for three possible stages, two of

them for hydrogen and one for fluorine. They calculate a specific impulse for vacuum conditions of 432 and 446 for the two kinds of hydrogen powered third stages, and a specific impulse of 457 for the fluorine powered version. These 11-25 points hardly justify the extra problems and dangers the fluorine would pose.

Well, that's the picture as it stands at the end of 1963, forecasting possible Egyptian, French and ELDO satellites. In the meantime the British are planning and building two satellites tentatively called UK-2 and UK-3 which, when finished, will be put into orbit the way *Ariel* was put there.

## Any Questions ?

In my logarithm table (printed in Europe) the mean distance from the sun, the astronomical unit, is given as 149.5 million kilometers. Expressed in statute miles this would be 92.894 million miles. But American books usually give the astronomical unit as 93 million miles, or as 93,003,000 miles. Evidently the figure of 93 million miles is just a round figure. Could you give me a more precise figure which is generally accepted?

Richard Mannheimer  
Denver, Colorado

Yes, the figure of 93 million miles is a rounded-off figure for easy remembering and it is slightly too large. However, the corrections which have been made during the last thirty years are on the order of 50,000 miles or less—which sounds small, especially if you remember that the first determination of the astronomical unit (by Giovanni Domenico Cassini of 1672, based on measurements during a Mars opposition) arrived at 138.4 million kilometers or 85,997,000 miles. The next determination of 1769, based on a transit of Venus, gave 151.6 million kilometers or 94,199,000 miles in 1873 Johann Gottfried Galle in Berlin used an opposition of the minor planet Flora and arrived at 148.33 million kilometers or 92,166 million miles. An opposition of the minor planet Eros in 1930 gave the figure of 149.66 million kilometers or 92.99 million miles (the origin of the figure in most books). Gerard de Vaucouleurs, in 1961, arrived at 149,829,000 kilometers or 92,920,000 miles, while radar bounces from Venus, also in 1961, gave 149,565,800 kilometers or 92,935,700 miles.

I suspect that I learned the answer to my question in high school but that was, I regret to say, quite a number of years

FOR YOUR INFORMATION

ago. My question is this: Christmas is always the 25th of December, but Easter wanders back and forth across the calendar. Why? And how is the date of Easter determined?

E. B. M. Barrett

Coral Gables, Florida

The reason why Easter does on a specific date is that the length of the year cannot be evenly divided into weeks, and Easter is to be a Sunday. The Council of Nicea (in 325 A. D.) decided that Easter should be celebrated on the Sunday which follows the first full moon after the vernal equinox. The earliest possible Easter date, therefore, is the 22nd of March, while the latest possible Easter date is the 25th of April.

The calculation of the date used to be a tedious job, until Carl Friedrich Gauss evolved a relatively simple formula which involves dividing the year by a set of numbers of which the first one is 19. Let us take the year 1970 as an example. 1970 divided by 19 is 103 with 13 left over. Gauss' formula works with these "leftovers" and assigns a letter to each one of them.

Easter, according to this formula, falls on

either

March (  $22+d+e$  )

or  
April (  $d+e-9$  )

Now we have to find the values for  $d$  and  $e$  where the formula runs as follows:

The remainder of Year divided by 19 is  $a$   
The remainder of Year divided by 4 is  $b$   
The remainder of Year divided by 7 is  $c$

$$d = \frac{19a + M}{30}$$

$$e = \frac{2b + 4c + 6d + N}{7}$$

the values of  $M$  and  $N$  depend on the year according to this table:

1700 - 1799	$M = 23$	$N = 3$
1800 - 1899	23	4
1900 - 2099	24	5
2100 - 2199	24	6

One more provision has to be mentioned: if the derived date should read April 26 (one day beyond the possible limit) the date will be April 19. If the date is the limit of April 25, it is changed to April 18, provided that  $d-23$  and  $a$  is larger than 10. (All these provisions are needed to take care of leap years).

Now let us carry the example through:

$$Y/19, a = 13$$

$$Y/4, b = 2$$

$$Y/7, c = 3$$

$$d = (247 + 24 = 271 : 30 = 9, \text{ remainder } 1) = 1.$$

$$e = (4 + 12 + 6 + 5 = 27 : 7 = 3, \text{ remainder } 6) = 6.$$

which produces the two possible dates of

$$\text{March } (22 + 1 + 6) = 29$$

$$\text{April } (1 + 6 = 7 - 9) + -2$$

The April date, being negative, is impossible, hence the date for Easter for 1970 is March 29.

In the May 1963 issue of the magazine *Planetary and Space Science* — I read my brother-in-law's copy — there is a remark that Russian writers have said that *The Book of the Secrets of Enoch* contains a passage which may be interpreted as a reference to a landing of extra-terrestrials on earth. The author of the article considers this interpretation mistaken. I must confess that I had never heard of such a book before and I wonder whether you could find out something about it.

Dorothy Steinfeld  
Orange, New Jersey

I had read this article too and I also had never heard of the *Book of the Secrets of Enoch*, but one afternoon in the New York Public Library clarified things. Fortunately the book was translated into English in 1896 by William Richard Morfill of Oxford University. It is one of a group of ancient writings which go under the general term of "apocalyptic writings" and

the Enoch to whom it is attributed is the Enoch of *Genesis* V: 18-24, the father of Methuselah and great grandfather of Noah. There are, as I learned from Mr. Morfill, two books of Enoch, one in Ethiopian and one in Slavonic but, again according to Mr. Morfill, they have nothing in common but the title. The Slavonic version is known in several copies, the most recent of which is a part of a *Sbornik* (collection) of the seventeenth century.

The book must have been written at about the time of Christ, for it is quoted in the so-called Epistle of Barnabas which is dated somewhere between 70 and 90 A. D. and in a few writings which are a few years older than Barnabas. But the writer was evidently somebody who spoke Greek and in all probability, Greek only because he told why Adam was given his name. According to this book the Lord wanted to indicate that Adam and his seed were to rule the earth, hence he was named after the four quarters of the earth which are: *anatole* (sunrise or east), *dysis* (sunset or west), *arktos* (north) and *mesembria* (south), hence a-d-a-m! That this little anagram works in Greek only and not in any other language did not occur to the writer.

FOR YOUR INFORMATION

The contents of the book are that Enoch is shown the heavens and that the Lord then decrees that Enoch shall be permitted to hear the sacred books. He is taken aside by the archangel Vretil (Morfill remarks that this name does not occur anywhere else; my Greek dictionary supplies the information that *bretas* is the term for a wooden image of a god; this may or may not be the root word) who reads to him for thirty days and nights without stopping, Enoch taking down every word. Then he is returned to earth.

All the time I was, of course, waiting for the passage which Russian writers, to whom the *Book of Enoch* is obviously more familiar than to us, had interpreted as being a record of an extraterrestrial visit. Finally, near the very end, I found the only lines which could conceivably be meant:

LVII (1) When Enoch has discoursed with the people, the Lord sent a darkness upon the earth, and there was a gloom, and it had those men standing with Enoch. (2) And the angel hastened and took Enoch and carried him to the highest heaven where the Lord secured him, and set him before his face, and the darkness departed from the earth and there was light. (3) And the people saw and did not understand how Enoch was taken, and they glorified God. And they who had seen such things departed to their houses.

Since the whole work is one

of religious imagery, the statement that Enoch was carried to the highest heaven while a supernatural darkness surrounded him can hardly be interpreted as having a physical meaning.

As a matter of fact the whole last scene is just an elaboration of *Genesis* V:24 "And Enoch walked with God; and he was not; for God took him." And it is probably this line which caused the ancient Greek-speaking writer to single him out as the central character of his own work. Most of the other people mentioned in *Genesis* simply die.

I understand that several aircraft manufacturers have plans for supersonic passenger jetliners on the drawing boards which will be able to cross the United States in about two hours. But I have also heard that there is a movement afoot for not licensing such airliners because of the noise problem. I can see that they must cause a lot of noise when they break through the sound barrier, but I don't see why this could not be over the ocean at both ends of the trip.

E. E. Farbstein

Great Neck, Long Island

First let me say that the term "sound barrier" is one of the most misleading and most mean-

ingless terms ever coined. There is no such thing. When the pilot of one of our supersonic fighters or bombers passes the speed of sound he has to look at his instrument panel to learn that he did. No sensation of any kind accompanies this so-called feat. It is sheer routine — if the plane is built for it.

Then what is the "sonic boom" that rattles windows when a supersonic plane passes overhead? The truthful answer is that it is a shock wave, but since this term does not mean much to most people let's take the whole problem more slowly — beginning with a propeller plane which travels at the rate of 300 miles per hour or about 40 per cent of the speed of sound.

Since the sound made by this plane is faster than the plane itself, the sound will travel ahead. To an observer on the ground the overall result is that he first hears a faint propeller noise from a distance, which then grows in volume, and is loudest when the plane is approximately overhead. Then it diminishes at about the same rate at which it increased earlier.

Now let us imagine a plane flying at precisely the speed of sound. (This cannot actually be done. An actual plane can stay below the speed of sound or it can fly faster than sound, but

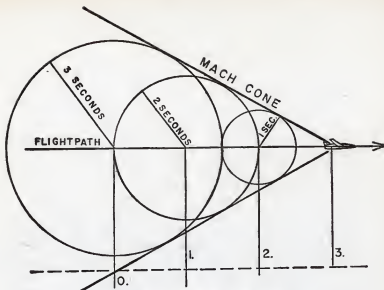


Fig. 2 The origin of the "sonic boom".

not at the speed of sound.) Since such a plane would move as fast as the noise it produces, its noise cannot travel ahead. Hence its approach could not be heard. To an observer on the ground the plane would approach noiselessly but then, when it is overhead, its noise would hit the observer with a sudden blow. As distinct from the gradual increase of the noise level of the subsonic plane, the noise from the plane traveling at the speed of sound would start at maximum intensity and then diminish gradually.

The actual case of a plane fly-

ing faster than the speed of sound is quite similar to the example of the plane flying at the speed of sound just given — except that it cannot yet be heard even when it is overhead.

The diagram shows what happens in the case of a plane flying at twice the speed of sound, or, in figures, at the rate of 2200 feet per second. But the noise made by the plane spreads only at the rate of 1000 feet per second. If we imagine the observer to be on the ground directly below the plane, at the line marked 3 in the diagram, the plane has

traveled 100 feet during the three seconds since it passed the zero line. But the noise produced three seconds ago at the zero line has travelled only 3300 feet. The noise made two seconds ago at the line marked 1 has spread only 2200 feet, and the noise made one second ago has spread for only 1100 feet.

As can be seen, these expanding spheres of sound (which appear as circles in the diagram) all fit into a cone which, in honor of the Austrian physicist Ernst Mach, is called the Mach cone.

All the noise produced by the plane is inside the Mach cone. Outside the cone complete silence prevails — that is, as far as noise from that particular plane is concerned. So if you hear the "sonic boom", it really means that you have just been enveloped by a Mach cone.

Now we can get back to the

problem of the supersonic airliner. At take off and landing, when it is flying at far less than the speed of sound, the noise is the same as that of current jetliners. But a number of minutes after takeoff the plane will become supersonic, and the Mach cone will begin to form and it will travel with the plane for the whole duration of its flight. For a flight across the ocean this probably won't matter. But a cross-country flight is a different story.

Naturally the Mach cone, like any shock wave, will be attenuated by distance. But normal flying altitudes are, as we well know, not high enough. And simply increasing the flight altitudes would have the result that the passenger liners get into the high air lines now reserved for military traffic. But this is a different problem.

— WILLY LEY

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# COLLECTOR'S FEVER

BY ROGER ZELAZNY

*It would make a fine exhibit  
in someone's collection. Too  
bad it happened to be alive!*

"What are you doing there, human?"

"It's a long story."

"Good, I like long stories. Sit down and talk. No — not on me!"

"Sorry. Well, it's all because of my uncle, the fabulously wealthy —"

"Stop. What does 'wealthy' mean?"

"Well, like rich."

"And 'rich'?"

"Hm. Lots of money."

"What's money?"

"You want to hear this story or don't you?"

"Yes, but I'd like to understand it too."

"Sorry, Rock, I'm afraid I

don't understand it all myself."

"The name is Stone."

"Okay, Stone. My uncle, who is a very important man, was supposed to send me to the Space Academy, but he didn't. He decided a liberal education was a better thing. So he sent me to his old spinster alma mater to major in nonhuman humanities. You with me, so far?"

"No, but understanding is not necessarily an adjunct to appreciation."

"That's what I say. I'll never understand Uncle Sidney, but I appreciate his outrageous tastes, his magpie instinct and his gross meddling in other people's affairs. I appreciate them till I'm



sick to the stomach. There's nothing else I can do. He's a carnivorous old family monument, and fond of having his own way. Unfortunately, he also has all the money in the family — so it follows, like a *xxt* after a *zzn*, that he always *does* have his own way."

"This money must be pretty important stuff."

"Important enough to sent me across ten thousand light-years to an unnamed world which, incidentally, I've just named Dunhill."

"The low-flying *zatt* is a heavy eater, which accounts for its low flying . . ."

"So I've noted. That is moss though, isn't it?"

"Yes."

"Good, then crating will be less of a problem."

"What's 'crating'?"

"It means to put something in a box to take it somewhere else."

"Like moving around?"

"Yes."

"What are you planning on crating?"

"Yourself, Stone."

"I've never been the rolling sort . . ."

"Listen, Stone, my uncle is a rock collector, see? You are the only species of intelligent mineral in the galaxy. You are also the largest specimen I've spotted so far. Do you follow me?"

"Yes, but I don't want to."

"Why not? You'd be lord of his rock collection. Sort of a one-eyed man in a kingdom of the blind, if I may venture an inappropriate metaphor."

"Please don't do that, whatever it is. It sounds awful. Tell me, how did your uncle learn of our world?"

"One of my instructors read about this place in an old space log. He was an old space log collector. The log had belonged to a Captain Fairhill, who landed here several centuries ago and held lengthy discourses with your people."

"Good old Foul Weather Fairhill! How is he these days? Give him my regards —"

"He's dead."

"What?"

"Dead. Kaput. Blooey. Gone. Deeble."

"Oh my! When did it happen? I trust it was an esthetic occurrence of major import —"

"I really couldn't say. But I passed the information on to my uncle, who decided to collect you. That's why I'm here — he sent me."

"Really, as much as I appreciate the compliment, I can't accompany you. It's almost deeble time —"

"I know, I read all about deebling in the Fairhill log before I showed it to Uncle Sid-

ney. I tore those page out. I want him to be around when you do it. Then I can inherit his money and console myself in all manner of expensive ways for never having gone to the Space Academy. First I'll become an alcoholic, then I'll take up wenching — or maybe I'd better do it the other way around . . .

"But I want to deeble here, among the things I've become attached to!"

"This is a crowbar. I'm going to unattach you."

"If you try it, I'll deeble right now."

"You can't. I measured your mass before we struck up this conversation. It will take at least eight months, under Earth conditions, for you to reach deeb-ling proportions."

"Okay, I was bluffing. But have you no compassion? I've rested here for centuries, ever since I was a small pebble, as did my fathers before me. I've added so carefully to my atom collection, building up the finest molecular structure in the neighborhood. And now, to be snatched away right before deeb-ling time, it's — it's quite unrock of you."

"It's not that bad. I promise you'll collect the finest Earth atoms available. You'll go places no other Stone has ever been before."

"Small consolation. I want my friends to see."

"I'm afraid that's out of the question."

"You are a very cruel human. I hope you're around when I deeble."

"I intend to be far away and on the eve of prodigious debaucheries when that occurs."

Under Dunghill's sub-E gravitation Stone was easily rolled to the side of the space sedan, crated, and, with the help of a winch, installed in the compartment beside the atomic pile. The fact that it was a short-jaunt sport model sedan, customized by its owner, who had removed much of the shielding, was the reason Stone felt a sudden flush of volcanic drunkenness, rapidly added select items to his collection and deebled on the spot.

He mushroomed upwards, then swept in great waves across the plains of Dunghill. Several young Stones fell from the dusty heavens wailing their birth pains across the community band.

"Gone fission," commented a distant neighbor, above the static, "and sooner than I expected. Feel that warm afterglow!"

"An excellent deeble," agreed another. "It always pays to be a cautious collector."

— ROGER ZELAZNY

# THE MANY DOOMS

BY HARRY HARRISON

ILLUSTRATED BY NODEL

***Some men should never go  
into space — for their own  
sake, and for the Earth's!***

*One by one I dismayed them,  
frightened them sore with my  
glooms*

*One by one I betrayed them  
unto my manifold dooms.*  
from *The Law of the Yukon*  
Robert W. Service

“Twelve, helmet lock,” Robson’s voice rattled from the external speaker of his pressure suit.

“Twelve,” Sonny Greet echoed, glancing at the red arrows now point-to-point on the helmet and shoulder plate, then banging the

closed latch with his fist. “Aligned and locked.”

“Thirteen, bleed valve,” Robson read from the checklist mounted on the bulkhead.

“Thirteen, closed,” Sonny tapped the other man’s suit with his knuckles.

“Fourteen, patch kit.”

“Fourtee . . . ”

“What are you doing, Sonny, just what in the hell do you think you are doing?” Captain Hegg broke in, stomping across the airlock chamber towards them.



"Helping the prof with his checklist — I thought that was obvious, Cap'n."

"Helping to kill him maybe. You are going to have to take this kind of thing more seriously. You didn't check that bleeder valve."

"I looked at it, the handle is up and down like it always is. Closed — and I've never seen one of them open yet."

"But you don't *know* until you have checked it," Hegg insisted with slow patience. "The handle might be broken, or turned a half turn."

"But it's not, see Cap." The tiny handle did not move when he pushed on it. "So I was right all along."

"You were not, Sonny. You did not follow checklist routine, that is all that matters."

"Mea culpa," Sonny insisted, raising his hands in mock surrender, grinning disarmingly. "Have patience with my youth, Cap'n, and I promise never to do it again."

"See that you don't."

"You don't think I'm out to kill you, do you, Prof?" Sonny asked, looking ruefully away from the retreating back of the captain. "If you were dead who could I possibly win a chess game from once in a while?"

"That's just Hegg's way, you

know." Robson's smile could just be made out through the thick viewplate of his helmet. "He is really a good type, but terribly hardworking. He means well."

"But why is it always my neck that gets caught in the bear trap when he is meaning well?"

Robson shrugged. "We had better finish running through the checklist. I want to get those sample traps in before dark."

"Right you are, Prof. We'll pick it up from fourteen."

Sonny watched through their single view port as Captain Hegg and Robson, slow and clumsy in their pressure suits, clambered over the nearby ridge and vanished from sight among the strangely earth-like trees. He shook his head, not for the first time, at the unreasonableness of it all.

"How about a game?" Arkady called from his bunk, holding up his pocket chess set. "I'll spot you a rook."

"Why commit suicide? You even won that game when you had no queen."

"Just your bad luck, Sonny. With a queen ahead you could even win against the great Botvinnik, may his memory be revered, if you would remember to just keep exchanging."

"Yeah, but I keep forgetting. Look, Ivan Ivanovich, look out there at a sunny day on Cassi-

dy-2. Wind in the trees, grass growing, maybe just a teensy tinge of green to the air that isn't quite earthlike. Doesn't it make you want to shuck off your clothes and go out and take a walk?"

"Makes you want to be dead in five seconds," Arkady answered heavily, setting up a problem on the board. "The air out there is rich with deadly poisons and a mixture of hydrogen and methane that would burn with a lovely flame in this room. Or in your lungs. Even the stones would burn in our air. Look how wonderfully Reshevsky sank Euwe back in middle ages, 1947."

"Aw, come on, you know what I'm talking about. I could give you lectures about the natural wonders of this world. Remember I'm the mineralogist here and you are just a thick-headed Russky mining engineer . . ."

"I go back to salt mine in morning."

". . . I'm talking about romance, emotion, art. Look out there. A world as close as the thickness of this wall, yet more unattainable than Earth, which happens to be light-years away. Don't you feel it? Don't you want to go out there?"

"I go out there without my suit I'll be dead in five seconds."

"You're an unimaginative clod. If you are the end product of

the Glorious Revolution I say bring back the Czar."

"Da. It's your turn to cook today."

"How could I forget? I was awake all night worrying about what to make for dinner. Will caviar go with the beef Strogan-off? Is the vodka cold enough?"

"Dehydrations and coffee will be fine with me," Arkady answered imperturbably, concentrating on the chess board. "You just torture yourself."

"I'm worried about young Greer," Captain Hegg said, after carefully making sure that he was talking through his suit speaker and that his radio was turned off.

"Sonny is a good chap," Robson answered, plodding along at his side. "He's not as young as all that either. He has his doctorate, he's done some very original work. I've read some of his papers."

"It's not his work that bothers me. If he couldn't do it Spatial Survey would never have sent him out on this job. If there are the right kind of mineral deposits here he will find them and Barabashev will find a way to get the stuff out. I don't know anything about that; but I do know my job, which is running this expedition and seeing that everyone stays alive. And Sonny

Greer is too careless out here."

"He has had field experience before."

"On Earth," Hegg snorted. "Antarctic, jungles, deserts. Kid stuff. This is his first offplanet trip and he is not serious enough about it. You know what I mean, professor."

"Only too well — since this is my eighth survey. And I am much more supernumerary than you are, let us not forget. The only reason the higher powers include a food-consuming ecologist such as I on these junkets is to stress the scientific value of new-planet work and to get a bigger appropriation come budget time. I have developed a very relaxed attitude towards this sort of thing from being on these expeditions, yet always being a bit on the outside. Give the chap enough time and keep after him. He'll catch on. Don't you remember me on my first expedition? Tanarik-4?"

Hegg laughed. "How could any of us forget it? It must have been a month before the smell washed off."

"Then you see what I mean. Everyone is green as grass at the start. He'll come around."

"I suppose you are right."

"There's something in my trap — look! A serpentoid and I swear — it has six legs!"

Two of the other traps also

contained samples of the local life forms, and it took some time for Robson to poison them and transfer them to the sealed carrying case. There was no possible way to bring living specimens back to earth, or even to keep them alive in the dome with the restricted means available. The animals would have to be dissected and preserved in sealed plastic.

It was sunset when they started the trek back with the heavy carrying case, and it was dark long before they had reached the dome. But the directional beam came in clearly and the light on top of the radio mast was visible while they were still two kilometers away. Air might have been a problem, they were both on their reserve tanks, but they had more than enough left for the remaining time. The outer door of the lock was open and Hegg pulled it shut behind them, spun the wheel to seal it, then began the atmosphere evacuation pumps. Robson turned on the cleansing showers to wash away all traces of the alien atmosphere and soil from their suits.

The shower roared briefly, then died to a weak trickle.

"The tank is empty," Hegg said, looking at the indicator on its side. "Who was supposed to refill it?"

"Sonny — I think," Robson said hesitatingly. "But I'm not really sure of the roster."

"I'm sure," Hegg said grimly. He spun to the intercom phone on the wall of the lock chamber and leaned on the bell button.

"What's up?" the tiny speaker buzzed. "This station on call day and ni . . ."

"You did not fill the shower tank, Greer. It is on your duty roster for today."

"You're right, Cap'n. Clean slipped my head worrying about dinner and all. Soon as you get inside I'll get right on it."

"Can you tell me how we are going to get back inside if we can't rinse?"

There was only silence for long seconds. Then, "I'm sorry about that. Just an accident. Is there anything we can do?"

"You're damn right there is. Get the drill and chuck in a bit with a diameter smaller than the filling hose from the reserve cans. Shave down the end of the hose, then one of you stand by with the tank while the other one drills a hole. As soon as the drill is through jam in the end of the hose — and I mean *fast*. You'll have a positive pressure on your side, so you'll be all right. We're in our suits. Then let in the shower fluid. We'll wash under the hose."

"It sounds dangerous, Captain. Isn't there anything else?"

"No. Do it that way, and do it now!"

"I'm surprised they didn't build the tank in there with a pipe so it could be filled from in here."

"The principle is to have a few openings as possible in a sealed bulkhead — and we can discuss the shortcomings of the designers some other time. Get that drill NOW!"

Captain Hegg waited stolidly while the endless seconds dragged by, but Robson could not control his growing concern. He kept glancing at his oxygen reserve indicator, tapping it nervously. The needle was almost to the *empty* mark. He jumped, startled, when a sudden shrill whining came from the silicon bronze wall. The whining slowed to a steady grinding noise and the black nose of the drill bit burst through the metal. It was jerked out and the hiss of incoming air ended abruptly as the tip of the hose plugged the opening. Liquid gushed from it.

"Do a good job of washing — and don't bother to look at your oxygen dial," Hegg said. "There is an unmarked safety reserve in all these tanks. We have more than enough time to do a complete job here."

They scrubbed quickly with



the heavy brushes, taking turns to wash the inaccessible parts of each other's suits. Robson had a stifling sensation that he knew was wholly imaginary and had to fight back an urge to scream when Hegg methodically washed the sample boxes, tilting them on end to get at their bottoms. More minutes dragged by as he went over them both, then carefully over the floor, with the sniffer. He found two suspect spots near the drain and had Robson scrub them while he finished quartering the area.

"All clean," Hegg said, straightening up. "And atmosphere evacuation is complete. Start the air pump and I'll crack the door."

Air hissed in, but even though the inner door was unlocked it stayed sealed, held in place by the difference in atmospheric pressure. Robson stood before it, clenching his sweat-damp fingers inside the armored gloves, fighting to appear as calm as Captain Hegg at his side. The sound of incoming air stopped and the door opened before them. Robson fumbled at the latch to unseal his helmet. Hegg already had his off, placed carefully in the rack, before he stalked into the dome, straight to the white-faced Sonny Greer who stood against the far wall.

"Do you know what you did?"

Do you have any idea just what you did?"

The words surprised the captain, because that was not what he had meant to say at all. Nor had he intended violence, yet his fist was clenched and his arm drawn back. *Christ*, he thought to himself, *do I want to kill the kid?* Toughened by experience on a dozen high-gravity worlds, his fist in that metal gauntlet would break the man's jaw, maybe his neck. It took more effort to relax than he had thought possible and he had to rub at the cable-hard muscles in his neck to force away the tension.

"I said that I was sorry, Captain. I mean that —"

"Will you get this through your thick head? Being sorry won't help me if I'm dead. You have had expedition experience before — earthside experience. What happens in the bloody Gobi desert or wherever you worked, if you don't fill the shower?"

"I —"

"I'll tell you what happens. Nothing happens. Someone maybe stays dirty for awhile but that is all. And what happens here if you forget to fill the shower? Two men can die, that is what can happen! Does the difference penetrate, mister bloody stupid schoolboy?"

Sonny Greer's face was red, then suddenly white with suppressed rage. Robson was watching from the doorway where he stood, his helmet in his hands.

"Easy on, Captain," he said in a worried voice. "There's no need for all of this."

"No, the captain is right," Sonny broke in, his voice shaking, whether from anger or other emotion was hard to tell. "I deserved that. And I'd lose my temper myself if someone pulled a stunt like that on me." Arkady watched but said nothing.

Captain Hegg turned his back and became involved in removing his pressure suit so that the others could not see his face. He felt that his lips were pulled back from his teeth like an animal ready to bite, and a small, cool part of his consciousness wondered at the unexpected ferocity of his reaction. Moving with unhurried precision, he forced himself to remove and stow the suit before he spoke. He was in control of himself again. Arkady was helping Robson with his armor in the lock chamber; they could hear what was being said but not interrupt.

"Listen, Greer. I have nothing personal against you, I hope you realize that." His voice was normal.

"I know that Cap'n. You're rough but square."

Hegg chose to ignore the hint of amusement in Sonny's tones.

"I'm glad you realize that, so you will understand that what I am going to do has no personal prejudice but is done by the book and for the good of the expedition as a whole. Have you ever heard of a planetary inefficiency rating?"

"No."

"I didn't think you had. It is not a secret, but at the same time it is also not talked about much. The rules are simple. Two strikes and you are out. Out of the expedition, out of Spatial Survey and out of a job. You have just had your first strike."

"What do you mean . . . ?"

"I mean exactly what I say. When I send in the weekly report tomorrow I am going to give you a negative efficiency mark. This will go on your record. It is not good, but it is nothing to be ashamed of, a lot of men have had them. The importance of the rating is double — to drive home the importance of regulations to you and to be sure you do not endanger anyone else's life. If you make one more blunder I send for your replacement."

"Have a heart, Cap'n, it wasn't all that bad! No one was hurt. I promise nothing like it will happen again. I'll try doubly hard if you don't report this."

"You will try doubly hard be-

cause I do report it. If I had any brains I would have sent in the first report when you didn't check the bleed valve on Robson's suit. If I had done that this would be your second mark and you would be out — which is where you belong. I don't think you have it in you to be a good spacer."

He turned and walked away, as far as he could in the limited confines of the dome. Sonny stared after him, chewing his lip.

"I am hungry," Arkady said, walking across the dome and looking into the pot that was simmering slowly on the electric stove. "The stew smells as good as ever. Anyone joining me?"

"A bowl for me, if you will, Arkady," Hobson said, trying with slight success to keep a natural tone into his voice.

"Your heroic treatment seems to have worked," Robson said looking out of the port to see if Sonny and Arkady were returning yet. "Over two weeks now and your problem child has been good as gold, serious as a clam and attentive to his duty."

"Not as serious as that. He is starting with the jokes again." Captain Hegg stretched his long fingers, cramped from laboring the keys of the minityper as he wrote up his report. "He must

take things seriously, all the time."

"I think that you are worrying without cause. You know that it is possible for a man to have a sense of humor and still to be serious about his work. Good lord, you never seem to complain about my jokes, except that you don't think them funny."

"A very different thing, professor. No matter how you are feeling you always do your work the same way, correctly and methodically."

"Some people use the term 'old-maidish' for that."

"Perhaps on Earth, where there are very few critical mistakes to be made. Out here it is essential to survival. A man must have it naturally, as you do, or force himself to learn it. Some never learn it and find jobs on earth. I would sleep much better if our mineralogist were there with them."

"Speak of the devil. They're on their way back now, lugging a great ruddy trunk between them. I hope you filled the shower tank."

"Of course! It's on my roster —" He caught Robson's eye and forced himself to smile in return, though he did not consider this sort of joke to be in very good taste.

The shower thundered and

roared on the other side of the bulkhead. Hegg eyed the patch where they had drilled the hole and made a mental note to change it in the morning; the continual pressure changes could not be doing the flexible material any good. He wished, not for the first time, that their weight allowance had allowed for some metalworking tools. The sound of the shower stopped and the inner lock opened; the two men burst into the dome cheering and swinging the heavy case between them.

"So pure they won't have to bother to refine it!" Arkady shouted.

"The mother lode, the bonanza, the richest strike in the known history of man — no, in the history of the galaxy!" Sonny struck a noble pose, one foot on the case, arms flung theatrically wide.

"I gather you have found a new deposit of ore," Robson observed dryly.

"Did you check with the sniffer before you bled in the air?"

"Of course, Cap'n, old watchdog!" Sonny was so lost in enthusiasm that he had the temerity to slap the captain on one massive shoulder and never noticed the sudden narrowing of his eyes. "As of this very moment you can chalk up this expedition as a howling success!"

"It will be three months before the ship is here to take us off. Plenty of work yet . . ."

"Paperwork and tedium, Cap me lad! The purpose of this trip was to see if rich enough deposits of titanium, beryllium or sodium could be found in great enough concentration to justify the installation of robot mining equipment, since it is impossible to bring in enough oxygen for large-scale human operation."

"We have found it," Arkady broke in. "Almost a mountain of ore! Chunks of pure metallic sodium. I can see the installation now — a pithead, a spaceport. The robot miners, conveyers, the hum of mighty machines!"

"Whenever you Russians get poetic it is always tractors or mighty machines," Captain Hegg said, catching the spark of their enthusiasm. "Now climb out of those suits. And if either of you are capable of it, I would enjoy having a written report that I can send off as soon as possible."

For a few hours that night the precariousness of their thin-walled bubble of air on an alien world was forgotten, for this was an event to be celebrated. Their survey was a success, even more successful than had been hoped for. The planet of Cassidy-2 would reluctantly release its precious metals and it would be the members of the expedition who

received the credit for this largesse.

Captain Hegg rooted in the bottom of the container of the dehydrated fish that they all loathed, and brought up four steaks that he had hidden there for a deserving occasion. Hobson, as acting medical officer, contributed a container of brandy from the hospital stores. The alcohol only added to their elation; they did not really need it. This was a night that would long be remembered. They retired late, calling back and forth from their bunks in the darkness, laughing outrageously at the sudden onslaught of Hobson's snores, then one by one falling off to sleep as well.

Captain Hegg awoke possessed by the premonition that something was very wrong. He shook his head, cursing the muffling effects of the brandy, trying to understand why he had woken up. The room was dark, except for the glow of telltale lights from the instrument panel, and even from his upper bunk he could see that they all were glowing green. It couldn't be that. A red warning when the board was on night command set off enough alarms to lift them right out of their beds. What else? He coughed and cleared his throat.

With sudden panic he inhaled deeply and broke into spasm-

dic coughing. Smoke! There could be no smoke here! Smoking was forbidden, while very few things in the dome were even combustible . . .

The ore case with the samples!

**"Roll out!"** Hegg bellowed as he half jumped, half fell from the high bunk and dived for the light switch. As his hand hit it he saw the red hairline gleam between the lid and the body of the sealed case.

**"Get up! Get up!"**

He pulled Sonny halfway out of his high bunk and at the same instant kicked Arkady in the side. This was all the time he could spare. He was aware of Robson stumbling up behind him as he dived for the case.

**"Robson! Open the door to the lock chamber."**

The ecologist was tugging at the wheel even before he had finished speaking, and Hegg put his shoulder to the case and pushed just as the side burst open with roaring flame. Clouds of white smoke poured out and intense glare bathed the full wall of the room. Hegg fell backward, coughing and retching painfully. Sonny jumped over him and threw a wad of blankets and bedding over the flame. The resistant material covered the flame and checked the smoke

for an instant while he and Arkady pushed the case towards the lock chamber door, now standing open.

Flame burst through the coverings almost instantly but they were at the door. Molten metal was dribbling from the flaming case and, pushing wildly, Arkady slipped and put his knee full into a pool of it. He rolled free, without uttering a sound, and beat the flame from his pajama legs with his bare hands. At the same moment Robson and Sonny gave a last concerted heave and the leaking case slid into the lock chamber. They pushed at the door.

"Evacuation . . . pump . . ." Hegg managed to say through his coughing, but Arkady had dragged himself there with one leg and the motor was already whining.

The smoke was thicker before the last burning goblet of metal had been shoveled up and dropped into the largest of their sample boxes. This was lined with heavier metal; before it burned through they had the lid sealed shut and an atmosphere of inert helium pumped in. The metal held, and in the lock chamber the burning also stopped as the combustible atmosphere was removed. With each passing second the air cleared as the air circulators drew out

and filtered away the smoke.

"What happened . . .?" Arkady asked, still dazed by the suddenness of the emergency. Blood ran down his leg, yet neither he nor any of the others noticed it.

"One of the locks on the sample case wasn't closed all the way," Robson said thickly. "I saw it just as I pushed the thing through the door. Right hand lock, open a couple of notches. Enough to let a trickle of air in . . ."

"Who sealed that case?" Hegg's voice hammered at them, his coughing forgotten, or under control.

"I did," Arkady said. Then, grimly, "But Sonny opened it again to put in a last piece of ore."

As though their heads were controlled by the same silent command they turned to face Sonny.

"But I didn't . . . well, maybe, it was an accident . . ." he said, his face slack, still stunned by the suddenness of the emergency.

Robson was closest. "You — you —" he said, but could not find the words. With his shining bald head and jowled cheeks he should have looked funny as he stood there, shaking with rage, but he did not. Almost of its own volition his open hand sprang out and slapped Sonny across

the face. Sonny stumbled backwards, his fingers fumbling towards the livid red mark on his white cheek.

Arkady hopped forward. His hard fist, swung with all of his weight, caught Sonny on the side of the neck, knocking him to the floor. The three men fell on the writhing body, pummeling and kicking it, mouthing inarticulate sounds.

Captain Hegg ground his heel deep into the prostrate man's side just once before he realized who he was and what he was doing. He reeled away, then turned back to shout to the other two men. They did not hear him and kept on grimly at what they were doing. Pulling at them did no good either so he had to stop Arkady with a paralyzing judo blow and drag the little professor over to his bunk and hold him there until he stopped struggling.

"Let me have the key to the medical supplies," he said, when he saw that Robson was finally listening.

No one ever discussed the affairs of that night, except for the needed mechanical details of cleaning up the damage. Sonny Greer lay for three days in his bunk, bandaged and silent, closing his eyes when anyone came near. Arkady's burns were

bandaged and he hobbled around the dome doing the minor maintenance work that he was capable of. Captain Hegg broke into fits of exhausting coughing if he did anything strenuous. Prof. Robson, though unmarked physically, seemed to have shrunk and his skin hung loosely. The three men kept very much to themselves, and when they talked did so in low voices.

It would be thirteen weeks before the relief ship arrived.

On the fourth day Sonny Greer climbed out of his bunk. Except for his bruised face and the bandages he seemed fit for duty.

"Is there anything I can do?" he asked.

Arkady and Robson turned away when he spoke. Hegg forced himself to answer.

"Just one thing. Arkady can't get into a suit, so you will have to go out with me once to get some more samples. After that you will be relieved of duty. You will stay in or near your bunk. You will touch none of the controls or equipment. Your meals will be brought to you."

After that no one talked to Sonny, even when they handed him his food. The tension in the small dome grew worse with every passing day and Hegg wondered how long it would be before something really snapped.

Sonny had stumbled once, on

his way from his bunk to the toilet cubby, and accidentally leaned on the air control console. Arkady had hit him once, knocking him halfway across the room. Hegg had been putting off the trip for the samples, but he finally forced himself to schedule it. Perhaps getting the man away from the others for a while would help.

"We are going after the ore samples tomorrow," he announced to the room in general. The silence that followed was deadly.

"Let me check out your suit for you, Captain," Arkady finally said.

"I'll help him." Robson climbed to his feet. "With two checking there are no errors. It's better that way."

Hegg let them go. It was that way all the time now, the three of them checking and counter-checking each other, almost living in panic with their awareness of the manifold dooms that the planet held in store for them. Captain Hegg did not know how this situation could remain static for three full months. When the two men emerged from the lock chamber, he realized that Sonny was looking at him.

"Can I check my suit, Captain?" he asked. Neither of the men had gone near Greer's suit. It was as though he didn't exist.

"Go ahead," Hegg said, then

followed him through the door and watched his every move. It was a compulsive action he could not have resisted if he had wanted to.

The morning was worse. Sonny was forced to fumble into his suit by himself since the men ignored him, while at the same time they insisted on going through Captain Hegg's checklist three times before they were satisfied. The inner door had actually been closed before Hegg could force himself to go over to the man, to run through the checklist with him. To touch Sonny's suit seemed repellent.

"One," Sonny said. "Spare oxy tank full."

"One," Hegg repeated, and with an effort of will drove his fingers to tap the hated metal. They went slowly down the list.

"Thirteen, bleed valve."

"Thirteen, closed." And Hegg's fingers went out and felt the closed valve . . . then spun it open a half turn.

"Wait! There, it's all right." He sealed the valve again with palsied hands.

What had possessed him, he thought as they left the lock and trudged slowly towards the distant hills? Why had he done that? He had not willed it. He would not kill Sonny, though he knew the man would be better



off dead, before he did something that killed them all.

It was that simple. Sonny Greer was a menace. No longer a friend, he was in league with the planet, joined in battle against them. That was why the other two men shunned him like a Jonah. He was a Jonah. Worse than a Jonah. He was linked with the omnipresent powers that sought to destroy them, and they must both feel, as he did, that Greer would be better off dead.

At that moment Sonny Greer let go of his end of the sample case, stumbled and fell.

Hegg looked on, stunned, as he writhed on the ground, clawing silently at his helmet. Sonny's suit speaker was cut off and only muffled sounds came through the thick armor. Hegg bent over him, uncomprehending, as the man's body arched like a bow and collapsed. Hegg rolled him over and looked through the faceplate at the dead, tortured face.

His instant sympathy was overwhelmed by a feeling of immense relief.

Sonny seemed to have been killed by poisoning from the atmosphere. But how could it have entered his suit? There could be no leaks in the armor. Hegg would swear to that; he had checked it thoroughly him-

self. Then he remembered his traitor fingers at the bleed valve and he quickly tried it. No, it was sealed.

Or was it? The handle was tight to the stop and vertical — but wasn't there too much thread showing? Hegg turned the limp body until the sun shone directly into the mouth of the valve.

It was jammed half open by a particle of metal. The air in the suit would be forced out by the greater internal pressure, and when the pressure dropped the outside atmosphere would leak in. Had leaked in; because Sonny Greer was completely and finally dead.

Again the wave of relaxation swept over the captain, and it carried with it a tiny, nagging question.

How had the metal gotten into the valve? By accident? A lucky accident that made it lodge in exactly such a way that the valve handle would look shut and feel shut — even though it was open?

"Cause of death, accidental," Captain Hegg said, louder than he had intended, as he climbed to his feet and cleaned the alien dust from his hands, then rubbed them on his legs to cleanse them again.

"It had to be an accident. I can't very well list you as suicide," he said to the unmoving

body. "It really should be self-defense, or justified homicide or something. But I can't say that, can I, Sonny?"

Now that death had removed the threat, he could feel for the first time the compassion that had been buried by his urge for survival.

"I'm sorry, Sonny," he whispered gently, and touched the lifeless shoulder. "You just

shouldn't have been out here. I wish for all our sakes we had found that out earlier.

"Mostly for your sake though," he said, rising. Then in a firmer voice. "I better get back to the dome, straighten this mess out . . ."

Beginning the long process of forgetting.

— HARRY HARRISON



## FORECAST

Ever since *Sconners Live in Voin* more than a decade ago, the name of Cordwainer Smith has stood for something rare and precious in science fiction, a kind of story that not only transcends what we know and do, but even what we are. Smith's characters are no longer entirely human. They are something beyond. Maybe they are something better. In the next issue of *Gloxy* we have a long complete story by Cordwainer Smith called *The Dead Lady of Clown Town* which shows what we mean. We recommend it to any Smith fan — and, we think, it will create a lot of new members of that class!

Back after an all-too-long absence is another *Gloxy* favorite, Richard Wilson. In *The Watchers in the Glode* next issue Wilson brings you a glimpse of the starry frontiers as our descendants may find them, a few centuries hence. They may not like what they'll find — but you'll like what Wilson has to say on the subject . . .

And, of course, there'll be more. Novelette called *The Children of Night*, by a fellow named Pohl. Column by Willy Ley on fossils of several kinds — the kind that are dug up, and the kind that do the digging and are sometimes embarrassed by what they find. Short stories . . . maybe another novelette or two . . . yes, we think you'll like the issue!

# An Ancient Madness

BY DAMON KNIGHT

ILLUSTRATED BY GIUNTA

*It was a crockery island, afloat on  
an endless sea, and its mighty old  
engines drove it on to . . . nowhere!*

I

Thirty sisters, as like as peas, were sitting at their looms in the court above the Gallery of Weavers. In the cool shadow, their white dresses rustled like the stirrings of doves, and their voices now murmured, now shrilled. Over the courtyard was a canopy of green glass, through

which the sun appeared to swim like a golden-green fish; but over the roofs could be seen the strong blue of the sky, and even, at one or two places, the piercing white sparkle of the sea.

The sisters were ivory-skinned, strong armed and straight of back, with eyebrows arched black over bright eyes. Some had grown fat, some were lean. But



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the same smiles dimpled their cheeks, the same gestures threw back their sleek heads when they laughed, and each saw herself mirrored in the others.

Only the youngest, Mary, was different. Hers was the clan face, but so slender and grave that it seemed a stranger's. She had been brought to birth to replace old Anna-one, who had fallen from the lookout and broken her neck sixteen springs ago; and some said it had been done too quick; that Mary was from a bad egg and should never have been let grow. Now the truth was that Mary's genes had a long-recessive trait of melancholy and unworldliness, turned up by accident in the last cross; but the Elders, who after all knew best, had decided to give her the same chance as anyone.

For in the floating island of Iliria, everyone knew that the purpose of life was happiness. And therefore to deprive anyone of life was a great shame.

At the far side of the court, Vivana called from her loom, "They say a new Fisher came from the mainland yesterday!" She was the eldest of the thirty, a coarse, goodnatured woman with a booming laugh. "If he's handsome, I may take him, and give you others a chance at my Tino. Rose, how would you like that? Tino would be a good man

for you." Her loom whirled, and rich, dark folds of liase rippled out. It was an artificial fiber, formed, spun, woven and dyed in the loom, hardening as it reached the air. A canister of the stuff, like tinted gelatin, stood at the top of every loom. It came from the Chemist clan, who concocted it by mysterious workings out of the sea water that tumbled through their vats.

"What, is he tiring of you already?" Rose called back. She was short and moon-faced, with strong, clever fingers that danced on the keyboard of her loom. "Probably you belched in his face once too often." She raised her shrill voice over the laughter. "Now let me tell you, Vivana, if the new Fisher is as handsome as that, I may take him myself, and let you have Mitri." Mounds of apple-green stuff tumbled into a basket.

Between them, Mary worked on, eyes cast down, without smiling.

"Gogo and Vivana!" someone shouted.

"Yes, that's right — never mind about the Fisher! Gogo and Vivana!" All the sisters were shouting and laughing. But Mary still sat quietly busy at her loom.

"All right, all right," shouted Vivana, wheezing with laughter.

"I will try him, but then who's to have Gunner?"

"Me!"

"No, me!"

Gunner was the darling of the Weavers, a pink man with thick blond lashes and a roguish grin.

"No, let the youngsters have a chance," Vivana called reprovingly. "Joking aside, Gunner is too good for you old scows." Ignoring the shrieks of outrage, she went on, "I say let Viola have him. Better yet, wait, I have an idea — how about Mary?"

The chatter stilled; all eyes turned toward the silent girl where she sat, weaving slow cascades of creamy white liase. She flushed quickly, and bowed her head, unable to speak. She was sixteen, and had never taken a lover.

The women looked at her, and the pleasure faded out of their faces. Then they turned away, and the shouting began again:

"Rudi!"

"Ernestine!"

"Hugal!"

"Areta!"

Mary's slim hands faltered, and the intricate diapered pattern of her weaving was spoiled. Now the bolt would have to be cut off, unfinished. She stopped the loom, and drooped over it, pressing her forehead against the smooth metal. Tears burned her eyelids. But she held herself

still, hoping Mia, at the next loom, would not see.

Below in the street, a sudden tumult went up. Heads turned to listen: there was the wailing of flutes, the thundering of drums, and the sound of men's rich voices, singing and laughing.

A gate banged open, and a clatter of feet came tumbling up the stair. The white dresses rustled as the sisters turned expectantly toward the arch.

A knot of laughing, struggling men burst through, full into the midst of the women, toppling looms, while the sisters shrieked in protest and pleasure.

The men were Mechanics, dark-haired, gaunt, leavened by a few blond Chemists. They were wrestling, Mechanic against Chemist, arms locked about each other's necks, legs straining for leverage. One struggling pair toppled suddenly, overturning two more. The men scrambled up, laughing, red with exertion.

Behind them was a solitary figure whose stillness drew Mary's eyes. He was tall, slender and grave, with russet hair and a quiet mouth. While the others shouted and pranced, he stood looking around the courtyard. For an instant his calm gray eyes met hers, and Mary felt a sudden pain at the heart.

"Dear, what is it?" asked Mia, leaning closer.

"I think I am ill," said Mary faintly.

"Oh, not now!" Mia protested.

Two of the men were wrestling again. A heave, and the dark Mechanic went spinning over the other's hip.

A shout of applause went up. Through the uproar, Vivana's big voice came booming, "You fishheads, get out! Look at this, half a morning's work ruined! Are you all drunk? Get out!"

"We're all free for the day!" one of the Mechanics shouted. "You, too — the whole district! It's in the Fisher's honor! So come on, what are you waiting for?"

The women were up, in a sudden flutter of voices and white skirts, the men beginning to spread out among them. The tall man still stood where he was. Now he was looking frankly at Mary, and she turned away in confusion, picking up the botched fabric with hands that did not feel it.

She was aware that two Mechanics had turned back, were leading the tall man across the courtyard, calling, "Violet— Clara!" She did not move, but her breath stopped.

Then they were pausing before her loom. There was an awful moment when she thought she could not move. Then she looked up fearfully. He was

standing there, hands in his pockets, slumped a little as he looked down at her.

He said, "What is your name?" His voice was low and gentle.

"Mary," she said.

"Will you go with me today, Mary?"

Around her, the women's heads were turning. A silence spread; she could sense the waiting, the delight held in check.

She could not! Her whole soul yearned for it, but she was too afraid, there were too many eyes watching. Miserably, she said, "No," and stopped, astonished, listening to the echo of her voice saying gladly, "Yes!" . . .

Suddenly her heart grew light as air. She stood, letting the loom fall, and when he held out his hand, hers went into it as if it knew how.

"So you have a rendezvous with a mainland Fisher?" the Doctor inquired jovially. He was pale-eyed and merry in his broad brown hat and yellow tunic; he popped open his little bag, took out a pill, handed it to Mary. "Swallow this, dear."

"What is it for, Doctor?" she asked, flushing.

"Only a precaution. You wouldn't want a baby to grow right in your belly, would you? Ha, ha, ha! That shocks you, does it? Well, you see, the Main-

landers don't sterilize the males, their clan customs forbid it, so they sterilize the females instead. We have to be watchful, ah, yes, we Doctors! Swallow it down, there's a good girl."

She took the pill, drank a sip of water from the flask he handed her.

"Good, good — now you can go to your little meeting and be perfectly safe. Enjoy yourself!" Beaming, he closed his bag and went away.

## II

On the high Plaza of Fountains, overlooking the quayside and the sea, feasts of shrimp and wine, seaweed salad, caviar, pasta, iced sweets had been laid out under canopies of green glass. Orchestras were playing. Couples were dancing on the old ceramic cobbles, white skirts swinging, hair afloat in the brilliant air. Farther up, Mary and Fisher had found a place to be alone.

Under the bower in the cool shade, they lay clasped heart to heart. In her ecstasy she could not tell where her body ended or his began.

"Oh, I love you, I love you!" she murmured.

His body moved, his head drew back a little to look at her. There was something troubled in

his gray eyes. "I didn't know this was going to be your first time," he said. "How is it that you waited so long?"

"I was waiting for you," she said faintly, and it seemed to her that it was so, and that she had always known it. Her arms tightened around him, wishing to draw him closer to her body again.

But he held himself away, looking down at her with the same vague uneasiness in his eyes. "I don't understand," he said. "How could you have known I was coming?"

"I knew," she said. Timidly her hands began to stroke the long, smooth muscles of his back, the man's flesh, so different from her own. It seemed to her that her fingertips knew him without being told.

His body stiffened; his gray eyes half closed. "Oh, Mary . . ." he said, and then he was close against her again, his mouth busy on hers.

Near the end she began to weep, and lay in his arms afterward with the luxurious tears wetting her cheeks, while his voice asked anxiously, "Are you all right? Darling, are you all right?"; and she could not explain, but only held him tighter and wept.

Later, hand in hand, they wandered down the bonewhite



stairs to the quayside strewn with drying nets, the glass floats sparkling sharp in the sun, spars, tackle and canvas piled everywhere. Only two boats were moored at the floating jetty below. The rest were out fishing, black specks on the glittering sea, almost at the horizon.

Over to eastward, they saw the desolate smudge of the mainland and the huddle of stones that was Porto. "That's where you live," she said wonderingly.

"Yes."

"What do you do there?"

He paused, looked down at her with that startled unease in his glance. After a moment he shrugged. "Work. Drink a little in the evenings, make love. What else would I do?"

A dull pain descended suddenly on her heart and would not lift its wings. "You've made love to many women?" she asked with difficulty.

"Of course. Mary, what's the matter?"

"You're going back to Porto. You're going to leave me."

Now the unnamed thing in his eyes had turned to open incredulity. He held her arms, staring down at her. "What else?"

She put her head down obstinately, burying it against his chest. "I want to stay with you," she said in a muffled voice.

"But you can't You're an Islander — I'm a Mainlander."

"I know."

"Then why this foolishness?"

"I don't know."

He turned her without speaking, and they stepped down from the promenade, went into the shadow of some storehouses that abutted on the quayside.

The doors were open, breathing scents of spices and tar, new cordage, drying fish. Beyond them was a pleasant courtyard with boats piled upside down on one side, on the other a table, an umbrella, chairs, all cool in the afternoon shadow. From there they took a shallow staircase up into a maze of little streets full of the dim, mysterious blue light that fell from canopies of tinted glass between roofs. Passing a house with open shutters, they heard the drone of childish voices. They peered in: it was the nursery school — forty young Bakers, Chemists, Mechanics, fair skins and dark, each in a doll-like miniature of his clan costume, all earnestly reciting together while the shovel-hatted Teacher stood listening at the greenboard. Cool, neutral light came from the louvred skylights. The small faces were clear and innocent, here a tiny Cook in his apron, there two Carters sitting together, identical in their

blue smocks, there a pale Doctor, and beside him, Mary saw with a pang, a little Weaver in white. The familiar features were childishly blunted and small, the ivory skin impossibly pure, the bright eyes wide.

"Look — that one," she whispered, pointing.

He peered in. "She looks like you. More like you than the others. You're different from all the rest, Mary. That's why I like you." He looked down at her with a puzzled expression; his arm tightened around her. "I've never felt quite this way about a girl before. What are you doing to me?" he said.

She turned to him, embracing him, letting her body go soft and compliant against his. "Loving you, darling," she said, smiling up, her eyes half-closed.

He kissed her fiercely, then pushed her away, looking almost frightened. "See here, Mary," he said abruptly, "we've got to understand something."

"Yes?" she said faintly, clinging to him.

"I'm going to be back in Porto tomorrow morning," he said.

"Tomorrow!" she said. "I thought —"

"My work was done this morning. It was a simple adjustment of the sonics. You'll catch plenty of fish from now on . . . I have nothing else to do."

She was stunned; she could not believe it. Surely there would be at least another night . . . that was little enough to ask.

"Can't you stay?" she said.

"You know I can't." His voice was rough and strained. "I go where they tell me, come when they say come."

She tried to hold back the time, but it slipped away, ran through her fingers; the sky darkened slowly from cerulean to Prussian blue. The stars came out, and the cool night wind stirred over the jetty.

Below her, in a cluster of lights, they were making the boat ready. Orchestrinos were playing up the hillside, and there was a little crowd of men and women gathering to say good-by. There was laughter, joking, voices raised good-naturedly in the evening stillness.

Klef, pale in the lights, came up the stairs to where she stood, his head tilted as he came, his grave eyes holding hers.

"I'm not going to cry," she said.

His hands took her arms, gripping her half in tenderness, half impatiently. "Mary, you know this is wrong. Get over it. Find yourself other men — be happy."

"Yes, I'll be happy," she said.

He stared down at her in un-

certainly, then bent his head and kissed her. She held herself passive in his arms, not responding or resisting. After a moment he let her go and stepped back. "Good-by, Mary."

"Good-by, Klef."

He turned, went quickly down the steps. The laughing voices surrounded him as he went toward the boat; after a moment she heard his voice, too, lifted in cheerful farewells.

In the morning she awoke knowing that he was gone. A frightening knowledge of loss seized her, and she sat up with her heart leaping.

Down the high dormitory, smelling faintly of cinnamon oil and fresh linens, the sisters were beginning to rustle sleepily out of their cubicles, murmuring and yawning. The familiar hiss of the showers began at the far end of the room. The white-curtained windows were open, and from her bed Mary could see the cream and terra cotta roofs spread out in a lazy descent. The air was cool and still and mysteriously pure: it was the best moment of the day.

She rose, washed herself and dressed mechanically. "What is it, dear?" asked Mia, bending toward her anxiously.

"Nothing. Klef is gone."

"Well, there'll be others." Mia patted her hand with a relieved

smile and went away. There was a closeness between them, they were almost of an age, and yet even Mia could not be comfortable long in Mary's company.

Mary sat with the others at table, silent in the steaming fragrances of coffee and new bread, the waves of cheerful talk that flowed around her. Carrying her loom, she went down with the rest into the court and sat in her usual place. The work began.

Time stretched away wearily into the future. How many mornings in her life would she sit here, where she sat now, beginning to weave as she did now? How could she endure it? How had she ever endured it? She put her fingers on the controls of the loom, but the effort to move them appalled her. A tear dropped bright on the keyboard.

Mia leaned over toward her. "Is there anything the matter? Don't you feel well?"

Her fists clenched uselessly. "I can't — I can't — " was all she could utter. Hot tears were running down her face; her jaw was shaking. She bowed her head over the loom.

The others clustered around her. "Sick?" "What's the trouble?" "It was her first time, remember." Then Vivana's big voice: "All right, what's wrong?"

She lifted her face. "He's gone, Vivana. I can't — "

"Of course he is. Don't be a silly girl." A big arm went around her comfortingly.

"But I love him!"

"Well, of course you did. Nothing to cry about. Now sit up and behave yourself." She held Mary's chin, squinting at her critically. "Hm. I don't suppose you've had much sleep. Didn't eat a bite at breakfast, either, did you?"

The tears kept on flowing, silently; Mary could not stop them.

"She isn't as strong as — " someone whispered.

"Shush! Now look here." Vivana's voice grew gentler. "I'm going to let you off weaving this morning. Go up and get some sleep, if you want to. Or go down to the pools and take the sun. Go on with you now; don't worry about the loom."

Mary stood up, drying her eyes, feeling miserable but flattered by the attention. The other sisters drifted back to their work. Vivana, taking Mary's arm, walked her over to the archway. "Listen," she said in a hoarse undertone, "how long since you've been to church?"

"I don't know. A few weeks. Or a month. Why?"

"Better go this morning. It'll do you good, believe me — take

my advice." With a final squeeze, Vivana let go her arm and turned away.

### III

Iliria was neither wearisomely flat, nor cone-shaped nor pyramidal in its construction, like some of the northern islands, but was charmingly hollowed, like a cradle. The old cobblestoned streets rose and fell; there were stairways, balconies, arcades; never a vista, always a new prospect. The buildings were pleasingly various, some domed and spired, others sprawling. Cream was the dominant color, with accents of cool light blue, yellow and rose.

For more than three hundred years the island had been afloat, just as it now was: the same plazas with their fountains, the same shuttered windows, the same rooftops. The people, too, were unchanged. Making the best of their reduced stock of healthy genes, Iliria's founders had chosen some two hundred types, all congenial, sturdy, industrious and cheerful, to be reproduced over and over, time without end. Every Ilirian male was sterilized before puberty; the race had its only immortality in the incubators and frozen-storage units of the clans' birth laboratories.

During the last century, some colonies had been creeping back onto the land as the contamination diminished; but every Ilirian knew that only island life was perfect.

Above, the unchanging streets and buildings served each generation as the last. Down below, the storage chambers, engine rooms, seines, preserving rooms, conveniently out of sight and hearing, went on functioning as they always had. Unsinkable, sheathed in ceramic above and below, the island would go on floating just as it now was, forever.

It was strange to Mary to see the familiar streets so empty. The morning light lay softly along the walls. In corners blue shadow gathered. Behind every door and window there was a subdued hum of activity; the clans were at their work. All the way to the church circle, she passed no one but a Messenger and two Carters with their loads. All three looked at her curiously until she was out of sight.

Climbing the Hill of Carpenters, she saw the gray dome of the church rising against the sky — a smooth, unrelieved ovoid, with a crescent of morning light upon it. Overhead, a flock of gulls hung in the air, wings spread, rising and dipping. They were gray against the light.

She paused on the porch step to look down. From this height she could see the quays and the breakwater, and the sun on the bright-work of the moored launches; and then the long rolling back of the sea, full of white-caps in the freshening breeze; and beyond that, the dark smudge of the land, and the clutter of brown windowed stone that was Porto. She stood looking at it for a moment, dry-eyed, then went into the shadowed doorway.

Clabert the Priest rose up from his little desk and came toward her with inkstained fingers, his skirt flapping around his ankles. "Good morning, cousin, have you a trouble?"

"I'm in love with a man who has gone away."

He stared at her in perplexity for a moment, then darted down the corridor to the left. "This way, cousin." She followed him past the great doors of the central harmonion. He opened a smaller door, curved like the end of an egg, and motioned her in.

She stepped inside. The room was gray, egg-shaped, and the light came uniformly from the smooth ceramic walls. "Twenty minutes," said Clabert, and withdrew his head. The door shut, joining indistinguishably with the wall around it.

Mary found herself standing on the faintly sloping floor, with the smooth single curve of the wall surrounding her. After a moment she could no longer tell how far away the big end of the ovicle was; the room seemed first quite small, only a few yards from one end to the other; then it was gigantic; bigger than the sky. The floor shifted uncertainly under her feet, and after another moment she sat down on the cool hollow slope.

The silence grew and deepened.

She had no feeling of confinement. The air was fresh and in constant slight movement. She felt faintly and agreeably dizzy, and put her arms behind her to steady herself. Her vision began to blur; the featureless gray curve gave her no focus for her eyes. Another moment passed, and she became aware that the muffled silence was really a continual slow hush of sound, coming from all points at once, like the distant murmuring of the sea. She held her breath to listen, and at once, like dozens of wings flicking away in turn, the sound stopped. Now, listening intently, she could hear a still fainter sound, a soft, rapid pattering that stopped and came again, stopped and came again . . . and listening, she realized that it was the multiple echo of



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her own heartbeat. She breathed again, and the slow hush flooded back.

The wall approached, receded . . . gradually it became neither close nor far away; it hung gigantically and mistily just out of reach. The movement of air imperceptibly slowed.

Lying dazed and unthinking, she grew intensely aware of her existence, the meaty solidness of her flesh, the incessant pumping of blood, the sigh of breath, the heaviness and pressure, the pleasant beading of perspiration on her skin. She was whole and complete, all the way from fingers to toes. She was uniquely herself; somehow she had forgotten how important being herself was . . .

"Feeling better?" asked Clabert, as he helped her out of the chamber.

"Yes . . ." She was dazed and languid; walking was an extraordinary effort.

"Come back if you have these confusions again," Clabert called after her, standing in the porch doorway.

Without replying, she went down the slope in the brilliant sunshine. Her head was light, her feet were amusingly slow to obey her. In a moment she was running to catch up with herself, down the steep cobbled street in

a stumbling rush, with faces popping out of shutters behind her, and fetched up laughing and gasping with her arms around a light column at the bottom.

A stout Carter in blue was grinning at her out of his tanned face. "What's the joke, woman?"

"Nothing," she stammered. "I've just been to church."

"Ah!" he said, with a finger beside his nose, and went on.

She found herself taking the way downward to the quays. The sunlit streets were empty; no one was in the pools. She stripped and plunged in, gasping at the pleasure of the cool fresh water on her body. And even when two Baker boys, an older one and a younger came by and leaned over the wall shouting, "Pretty! Pretty!" she felt no confusion, but smiled up at them and went on swimming.

Afterward, she dressed and strolled, wet as she was, along the sea-wall promenade. Giddily, she began to sing as she walked, "Open your arms to me, sweetheart, for when the sun shines it's pleasant to be in love . . ." The orchestrinos had been playing that, that night when —

She felt suddenly ill, and stopped with her hand at her forehead.

What was wrong with her? Her mind seemed to reel; shake it-

self from one pattern into another. She swung her head up, looking with sharp anxiety for the brown tangle of buildings on the mainland.

At first it was not there, and then she saw it, tiny, almost lost on the horizon. The island was drifting, moving away, leaving the mainland behind.

She sat down abruptly; her legs lost their strength. She put her face in her arms and wept: "Klef! Oh, Klef!"

This love that had come to her was not the easy, pleasant thing the orchestrinos sang of. It was a kind of madness. She accepted that, and knew herself to be mad, yet could not change. Waking and sleeping, she could think only of Klef.

Her grief had exhausted itself; her eyes were dry. She could see herself now as the others saw her — as something strange, unpleasant, ill-fitting. What right had she to spoil their pleasure?

She could go back to church, and spend another dazed time in the ovicle. "If you have these confusions again," the Priest had said. She could go every morning, if need be, and again every afternoon.

She had seen one who needed to do as much, silly Marget Tailor who always nodded and smiled drooling a little, no mat-

ter what was said to her, and who seemed to have a blankness behind the glow of happiness in her eyes. That was years ago. She remembered the sisters always complained of the wet spots Marget left on her work. Something must have happened to her; others cut and stitched for the Weavers now.

Or she could hug her pain to herself, scourge them with it, make them do something . . .

She had a vision of herself running barefoot and ragged through the streets, with people in their doorways shouting, "Crazy Mary! Crazy Mary!" If she made them notice her, made them bring Klef back . . .

She stopped eating except when the other sisters urged her, and grew thinner day by day. Her cheeks and eyes were hollow. All day she sat in the courtyard, not weaving, until at length the other women's voices grew melancholy and seldom. The weaving suffered; there was no joy in the clan house. Many times Vivana and the others reasoned with her, but she could only give the same answers over again, and at last she stopped replying at all.

"But what do you want?" the women asked her, with a note of exasperation in their voices.

What did she want? She wanted Klef to be beside her every



night when she went to sleep, and when she wakened in the morning. She wanted his arms about her, his voice murmuring in her ear. Other men? It was not the same thing. But they could not understand.

#### IV

The Elders met in a long, low room with cream colored walls and beams of bone white. Behind a plain table of sanded, unpolished wood they sat in their starched white garments, and looked at her with their wrinkled dark faces, with their great dark eyes that were like an aged caricature of her own.

"Please your ageships," said Vivana uncomfortably, "this is the matter of your youngest, Mary, who won't go back to work at the looms." She curtsied and sat down.

"Won't go back to work?" asked the eldest, the crone Laura-one, with an incredulous lift of her hairless eyebrows. "Is she sick then?"

Vivana bobbed up again. "Please your ageship, she's been to the Doctors. They said she was poorly and gave her a tonic, but she threw it away."

There was an agitated stir among the Elders. Heads bent together; eyes stared at Mary in disbelief and alarm.

"Come closer, child," said Laura-one at last, beckoning with a clawed finger. Mary rose and walked to the table.

"Now, then, tell me. Why won't you go back to work? Why did you throw the tonic the doctor gave you away?"

"I won't work," she dared to say, "until they give me back Klef."

The Elders looked at each other. "Klef? What is Klef?"

"Klef is my lover!" she said. "He had to go back to the Mainland, but no one will listen. I have to be with him. Either let me go, or bring him back. That's all about it," she finished, and folded her arms across her breast.

"But my dear child," said Laura-one, bending across the table, "if I understand what you are saying you feel you have a claim upon this Klef of yours, simply because he lay with you a night or two? Is that it?"

Mary nodded.

"But don't you see how absurd that is? What if all of us suddenly decided to feel the same way?"

"Then each woman would have her man, and everyone would be happy!" answered Mary.

"My dear, they are all happy now. Except you."

At these words, Mary found

herself unable to prevent the tears from flowing. She wept miserably, and could only sob, "He's mine. I want him! I want him!"

The Elders looked at each other with faces of dismay. At a sign from Laura-one, Vivana led Mary away.

"Sisters," said the eldest, when Mary was gone, "here's a pretty pail of fish. What's to be done?"

"The girl came from a bad egg," said Laura-two, tracing a round design on the table with her fingertip. "It's a pity. It happens sometimes. There was a madman when I was a child, I remember the women talking of it. Once I think I saw him: wild eyes, and he waved his arms. Some of the Chemist boys laughed, but he frightened me."

"What was done with him, do you remember?" asked Edna-three.

"No. I don't like to think of it."

The others looked at each other. "We must help her if we can," said Laura-one.

"Yes."

"She's had no man since this Klef?"

"It seems not."

"If she had one or two, she'd soon see there's little difference."

"That's true."

"Let's think." The old heads leaned nearer across the table.

"But why do you want me to make myself pretty?" Mary asked with dull curiosity.

Mia bent over her with a tube of cosmetic, touching the pale lips with crimson. "Never mind, something nice. Here, let me smooth your eyebrows. Tut, how thin you've got! Never mind, you'll look very well. Put on your fresh robe, there's a dear."

"I don't know what difference it makes." But Mary stood up and wearily took off her dress, thin and pale in the light. She put the new robe over her head, shrugged her arms into it.

"Is that all right?" she asked.

"Dear Mary," said Mia, with tears of sympathy in her eyes. "Sweet, no, let me smooth your hair. Stand straighter, can't you? How will any man —"

"Man?" said Mary. A little color came and went in her cheeks. "Klef?"

"No, dear. Forget Klef, will you?" Mia's voice turned sharp with exasperation.

"Oh." Mary turned her head away.

"Can't you think of anything else? Do try, dear. For me. Just try."

"All right."

"Now come along, they're waiting for us."

Mary stood up submissively and followed her sister out of the dormitory.

**I**n bright sunlight, the women stood talking quietly and worriedly around the bower. With them was a husky Chemist with golden brows and hair. His pink face was good-natured and peaceful. He pinched the nearest sister's buttock and whispered something in her ear; she slapped his hand irritably.

"Quick, here they come," said one suddenly. "Go in now, Gunner."

With an obedient grimace, the blond man ducked his head and disappeared into the bower. In a moment Mia and Mary came into view, the thin girl hanging back when she saw the crowd and the bower.

"What is it?" she complained. "I don't want — Mia, let me go."

"No, dear. Come along. It's for the best, you'll see," said the other girl soothingly. "Do give me a hand here, one of you, won't you?"

The two women urged the girl toward the bower. Her face was pale and frightened. "But what do you want me to — You said Klef wasn't — Were you only teasing me? Is Klef — ?"

The women gave each other looks of despair. "Go in, dear, and see, why don't you?"

A wild expression came into Mary's eyes. She hesitated, then stepped nearer the bower. The two women let her go. "Klef?"

she called plaintively. There was no answer.

"Go in, dear."

She looked at them appealingly, then stopped and put her head in. A man's form lay waiting for her in the dimness. "Klef?" she said.

The man sat up; strong hands caught her wrists, pulled her down. His eyes gleamed in the dimness; she caught the reek of his breath — beer and fish. She gasped and began to struggle.

"So, so," the man muttered, holding her body hard against him.

"But you're not Klef! Let me go!" She kicked ineffectually, clawed at his face. The man grunted in surprise. When she screamed, he put his hand over her mouth.

"Stop that!" he said, then cried out in pain — she had bitten the meaty pad under his thumb. "What's the matter with you?"

Her limbs had turned weak. She tried to get up, and this time the man's body rolled away from her. Outside the bower, anxious voices were calling. Weeping, Mary got to hands and knees, then struggled to her feet.

"What's the matter with you?" the man's voice said again, in a tone of anger.

She came out into the light,

blinded by tears. Her robe was wadded somehow around her waist, and she could not see to pull it down. Bent over, tugging at the robe to cover herself, she walked past the blurred faces, the reaching hands.

"Mary, wait —" "Dear, what is it — what did he do?"

"She bit me!" came the man's indignant voice.

"You fool, you must have been too rough."

Somewhere up the slope, an orchestrino began playing. "*If you would not be cruel, torment me no more. Do not deny me ever; let it be now or never. Give me your love, then, as you promised me before . . .*"

## V

Her agheship, Laura-one, the eldest Weaver, was pacing up and down the sea-wall promenade, knotting her fingers together in silent agitation. Once she paused to look over the parapet. Below her the wall dropped sheer to blue water. She glanced over at the blur of Porto, half concealed in the morning haze, and at the stark hills above with their green fur of returning vegetation.

Her eyes were still keen. Half-way across the distance, she could make out a tiny dark dot moving toward the island.

Footsteps sounded in the street below. In a moment Vivana appeared, holding Mary by the arm. The younger woman's eyes were downcast; the older looked worried and anxious.

"Here she is, your agheship," said Vivana. "They found her at the little jetty, throwing bottles into the sea."

"Again?" asked the old woman. "What was in the bottles?"

"Here's one of them," said Vivana, handing over a crumpled paper.

"Tell Klef the Fisher of the town of Porto that Mary Weaver still loves him," the old woman read. She folded the paper slowly and put it into her pocket. "Always the same," she said. "Mary, my child, don't you know that these bottles never can reach your Klef?"

The young woman did not raise her head or speak.

"And twice this month the Fishers have had to catch you and bring you back when you stole a launch," the old woman continued. "Child, don't you see that this must end?"

Mary did not answer.

"And these things that you weave, when you weave at all," said Laura-one, taking a wadded length of cloth from her apron pocket. She spread it taut and held it to the light. In the pattern, visible only when the light

fell glancingly upon it, was woven the figure of a seated woman with a child in her arms. Around them were birds with spread wings among the intertwined stems of flowers.

"Who taught you to weave like this, child?" she asked.

"No one," said Mary, not looking up.

The old woman looked down at the cloth again. "It's beautiful work, but — " She sighed and put the cloth away. "We have no place for it. Child, you weave so well, why can't you weave the usual patterns?"

"They are dead. This one is alive."

The old woman sighed again. "And how long is it that you have been demanding your Klef back, dear?"

"Seven months."

"But now think." The old woman paused, glanced over her shoulder. The black dot on the sea was much nearer, curving in toward the jetty below. "Suppose this Klef did receive one of your messages. What then?"

"He would know how much I love him," said Mary, raising her head. Color came into her cheeks; her eyes brightened.

"And that would change his whole life, his loyalties, everything?"

"Yes!"

"And if it did not?"

Mary was silent.

"Child, if that failed, would you confess that you have been wrong? Would you let us help you?"

"It wouldn't fail," Mary said stubbornly.

"But if it did?" the older woman insisted gently. "Just suppose — just let yourself imagine."

Mary was silent a moment. "I would want to die," she said.

The two elder Weavers looked at each other, and for a moment neither spoke.

"May I go now?" Mary asked.

Vivana cast a glance down at the jetty, and said quickly, "Maybe it's best, your ageship. Tell them — "

Laura-one stopped her with a raised hand. Her lips were compressed. "And if you go, child, what will you do now?"

"Go and make more messages, to put into bottles."

The old woman sighed. "You see?" she said to Vivana.

Footsteps sounded faintly on the jetty stair. A man's head appeared. He was an island Fisher, stocky, dark-haired, with a heavy black mustache. "Your ageship, the man is here," he said, saluting Laura-one. "Shall I — ?"

"No," said Vivana involuntarily. "Don't. Send him back."

"What would be the good of that?" the old woman asked reasonably. "No, bring him up, Alec."

The Fisher nodded, turned and was gone down the stair.

Mary's head had come up. She said, "The man — ?"

"There, it's all right," said Vivana, going to her.

"Is it Klef?" she asked fearfully.

The older woman did not reply. In a moment the black-mustached Fisher appeared again; he stared at them, climbed to the head of the stair, stood aside.

Behind him, after a moment, another head rose out of the stairwell. Under the russet hair, the face was grave and thin. The gray eyes went to Laura-one, then to Mary; they stared at her, as the man continued to climb the steps. He reached the top, and stood waiting, hands at his sides. The black-mustached Fisher turned and descended behind him.

Mary had begun to tremble all over.

"There, dear, it's all right," said Vivana, pressing her arms. As if the words had released her, Mary walked to the Fisher. Tears were shining on her face. She clutched his tunic with both hands, staring up at him. "Klef?" she said.

His hands came up to hold her. She threw herself against him then, so violently that he staggered, and clutched him as if she wished to bury herself in his body. Strangled, hurt sounds came out of her.

The man looked over her head at the two older women. "Can't you leave us alone for a moment?" he asked tonelessly.

"Of course," said Laura-one, a little surprised. "Why not? Of course." She gestured to Vivana, and the two turned, walked away a little distance down the promenade to a bench, where they sat looking out over the sea wall.

Gulls mewed overhead. The two women sat side by side without speaking or looking at one another. They were not quite out of earshot.

## VI

"Is it really you?" Mary asked, holding his face between her hands. She tried to laugh. "Darling, I can't see . . . you're all blurred."

"I know," said Klef quietly. "Mary, I've thought about you many times."

"Have you?" she cried. "Oh, that makes me so happy. Oh, Klef, I could die now! Hold me, hold me."

His face hardened. His hands

absently stroked her back, up and down. "They sent me to talk to you," he said. "They thought you might listen to me. I'm supposed to cure you."

"Of loving you?" Mary laughed. At the sound, his hands tightened involuntarily on her back. "How foolish they were! How foolish, Klef!"

"Mary, we have only these few minutes," he said.

She drew back a little to look at him. "I don't understand."

"I'm to talk to you, and then go back. That's all I'm here for."

She shook her head in disbelief. "But you told me —"

"Mary, listen to me. There is nothing else to do. Nothing."

"Take me back with you, Klef." Her hands gripped him hard. "That's what I want — just to be with you. Take me back."

"And where will you live? In the Fishers' dormitory with forty men?"

"I'll live anywhere, in the streets, I don't care —"

"They would never allow it. You know that, Mary."

She was crying, holding him, shuddering all over. "Don't tell me that, don't say it. Even if it's true, can't you pretend a little? Hold me, Klef! Tell me that you love me."

"I love you," he said.

"Tell me that you'll keep me

— never let me go — no matter what they say."

He was silent a moment. "It's impossible."

She raised her head.

"Try to realize," he said. "This is a sickness, Mary. You must cure yourself."

"Then you're sick too!" she said.

"Maybe I am, but I'll get well, because I know I have to. And you must get well too. Forget me. Go back to your sisters and your weaving."

"No, never," she said.

"You must. Promise me, Mary." He held her tighter. "Do you understand? It's important to me. I must know, before I leave, that you'll let them cure you. Otherwise —"

"Otherwise?"

"I couldn't bear it," he said.

She put her cheek against his chest, gazing out across the bright ocean. "Let me just be quiet with you a moment," she said. "I won't cry any more. Klef—?"

"Yes?"

"Is that all you have to say to me?"

"It has to be all." His eyes closed, opened again. "Mary, I didn't want to feel this way. It's wrong, it's unhealthy, it hurts. Promise me, before I go. Say you'll let them cure you."

She pushed herself away,

wiped her eyes and her cheeks with the heel of one hand. Then she looked up. "I'll let them cure me," she said.

His face contorted. "Thank you. I'll go now, Mary."

"One more kiss!" she cried, moving toward him involuntarily. "Only one more!"

He kissed her on the lips, then wrenched himself away, and looking down to where the two women sat, he made an angry motion with his head.

As they rose and came nearer, he held Mary at arm's length. "Now I'm really going," he said harshly. "Good-by, Mary."

"Good-by, Klef." Her fingers were clasped tight at her waist.

The man waited, looking over her head, until Vivana came up and took her arms gently. Then he moved away. At the head of the stairs he looked at her once more; then he turned and began to descend.

"Dear, it will be better now, you'll see," said Vivana uncertainly.

Mary said nothing. She stood still, listening to the faint sounds that echoed up from the stairwell: footsteps, voices, hollow sounds.

There was a sudden stir, then footsteps mounting the stair.

Klef appeared again, chest heaving, eyes bright. He seized both of Mary's hands in his. "Listen!" he said. "I'm mad. You're mad. We're both going to die."

"I don't care!" she said. Her face was glowing as she looked up at him.

"They say some of the streams are running pure, in the hills. Grass is growing there — there are fish in the streams, even the wild fowl are coming back. We'll go there, Mary, together — just you and I. Alone. Do you understand?"

"Yes, Klef, yes, darling."

"Then come on!"

"Wait!" cried Laura-one shrilly after them as they ran down the stair. "How will you live? What will you eat? Think what you are doing!"

Faint hollow sounds answered her, then the purr of a motor.

Vivana moved to Laura-one's side, and the two women stood watching, stricken silent, as the dark tiny shape of the launch moved out into the brightness. In the cockpit they could make out the two figures close together, dark head and light. The launch moved steadily toward the land; and the two women stood staring, unable to speak, long after it was out of sight.

— DAMON KNIGHT



# MEN OF GOOD WILL

BY BEN BOVA & MYRON R. LEWIS

*Why was the Moon at peace  
when all the rest of the  
Solar System was at war?*

**"I** had no idea," said the UN representative as they stepped through the airlock hatch, "that the United States' lunar base was so big, and so thoroughly well equipped."

"It's a big operation, all right," Colonel Patton answered, **grinning** slightly. His professional satisfaction showed even behind the faceplate of his pressure suit.

The pressure in the airlock equalibrated, and they squirmed

out of their aluminized protective suits. Patton was big, **scraping** the maximum limit for space-vehicle passengers, Torgeson, the UN man, was slight, thin-haired, bespectacled and somehow bland-looking.

They stepped out of the airlock, into the corridor that ran the length of the huge plastic dome that housed Headquarters, U. S. Moonbase.

"What's behind all the doors?" Torgeson asked. His English had

a slight Scandinavian twang to it. Patton found it a little irritating.

"On the right," the colonel answered, businesslike, "are officers' quarters, galley, officers' mess, various laboratories and the headquarters staff offices. On the left are the computers."

Torgeson blinked. "You mean that half this building is taken up by computers? But why in the world . . . that is, why do you need so many? Isn't it frightfully expensive to boost them up here? I know it cost thousands of dollars for my own flight to the Moon. The computers must be —"

"Frightfully expensive," Patton agreed, with feeling. "But we need them. Believe me we need them."

They walked the rest of the way down the long corridor in silence. Patton's office was at the very end of it. The colonel opened the door and ushered in the UN representative.

"A sizeable office," Torgeson said. "And a window!"

"One of the privileges of rank," Patton answered, smiling tightly. "That white antenna mast off on the horizon belongs to the Russian base."

"Ah, yes. Of course. I shall be visiting them tomorrow."

Colonel Patton nodded and gestured Torgeson to a chair as

he walked behind his metal desk and sat down.

"Now then," said the colonel. "You are the first man allowed to set foot in this Moonbase who is not a security-cleared, triple-checked, native-born, Government-employed American. God knows how you got the Pentagon to okay your trip. But — now that you're here, what do you want?"

Torgeson took off his rimless glasses and fiddled with them. "I suppose the simplest answer would be the best. The United Nations must — absolutely must — find out how and why you and the Russians have been able to live peacefully here on the Moon."

Patton's mouth opened, but no words came out. He closed it with a click.

"Americans and Russians," the UN man went on, "have fired at each other from orbiting satellite vehicles. They have exchanged shots at both the North and South Poles. Career diplomats have scuffled like prizefighters in the halls of the United Nations building . . ."

"I didn't know that."

"Oh, yes. We have kept it quiet, of course. But the tensions are becoming unbearable. Everywhere on Earth the two sides are armed to the teeth and on the

verge of disaster. Even in space they fight. And yet, here on the Moon, you and the Russians live side by side in peace. We must know how you do it!"

Patton grinned. "You came on a very appropriate day, in that case. Well, let's see now . . . how to present the picture. You know that the environment here is extremely hostile: airless, low gravity . . ."

"The environment here on the Moon," Torgeson objected, "is no more hostile than that of orbiting satellites. In fact, you have some gravity, solid ground, large buildings — many advantages that artificial satellites lack. Yet there has been fighting aboard the satellites — and not on the Moon. Please don't waste my time with platitudes. This trip is costing the UN too much money. Tell me the truth."

Patton nodded. "I was going to. I've checked the information sent up by Earthbase: you've been cleared by the White House, the AEC, NASA and even the Pentagon."

"So?"

"Okay. The plain truth of the matter is — " A soft chime from a small clock on Patton's desk interrupted him. "Oh. Excuse me."

Torgeson sat back and watched as Patton carefully began clearing off all the articles on his

desk: the clock, calendar, phone, IN/OUT baskets, tobacco can and pipe rack, assorted papers and reports — all neatly and quickly placed in the desk drawers. Patton then stood up, walked to the filing cabinet, and closed the metal drawers firmly.

He stood in the middle of the room, scanned the scene with apparent satisfaction, and then glanced at his wristwatch.

"Okay," he said to Torgeson. "Get down on your stomach."

"What?"

"Like this," the colonel said, and prostrated himself on the rubberized floor.

Torgeson stared at him.

"Come on! There's only a few seconds."

Patton reached up and grasped the UN man by the wrist. Unbelievably, Torgeson got out of the chair, dropped to his hands and knees and finally flattened himself on the floor, next to the colonel.

For a second or two they stared at each other, saying nothing.

"Colonel, this is embar — "

The room exploded into a shattering volley of sounds.

Something — many something — ripped through the walls. The air hissed and whined above the heads of the two prostrate men. The metal desk and file cabinet rang eerily.

Torgeson squeezed his eyes shut and tried to worm into the floor. It was just like being shot at!

Abruptly it was over.

The room was quiet once again, except for a faint hissing sound. Torgeson opened his eyes and saw the colonel getting up. The door was flung open. Three sergeants rushed in, armed with patching disks and tubes of cement. They dashed around the office sealing up the several hundred holes in the walls.

Only gradually, as the sergeants carried on their fevered, wordless task, did Torgeson realize that the walls were actually a quiltwork of patches. The room must have been riddled repeatedly!

He climbed slowly to his feet. "Meteors?" he asked, with a slight squeak in his voice.

Colonel Patton grunted negatively and resumed his seat behind the desk. It was pockmarked, Torgeson noticed now. So was the file cabinet.

"The window, in case you're wondering, is bulletproof."

Torgeson nodded and sat down.

"You see," the colonel said, "life is not as peaceful here as you think. Oh, we get along fine with the Russians — now. We've learned to live in peace. We had to."

"What were those . . . things?"

"Bullets."

"Bullets? But how —"

The sergeants finished their frenzied work, lined up at the door and saluted. Colonel Patton returned the salute and they turned as one man and left the office, closing the door quietly behind them.

"Colonel, I'm frankly bewildered."

"It's simple enough to understand. But don't feel too badly about being surprised. Only the top level of the Pentagon knows about this. And the president, of course. They had to let him in on it."

"What happened?"

Colonel Patton took his pipe rack and tobacco can out of a desk drawer and began filling one of the pipes. "You see," he began, "the Russians and us, we weren't always so peaceful here on the Moon. We've had our incidents and scuffles, just as you have on Earth."

"Go on."

"Well —" he struck a match and puffed the pipe alight — "shortly after we set up this dome for Moonbase HQ, and the Reds set up theirs, we got into some real arguments." He waved the match out and tossed it into the open drawer.

"We're situated on the *Oceanus Procellarum*, you know. Ex-

actly on the lunar equator. One of the biggest open spaces on this hunk of airless rock. Well, the Russians claimed they owned the whole damned *Oceanus*, since they were here first. We maintained the legal ownership was not established, since according to the UN Charter and the subsequent covenants — ”

“Spare the legal details! Please, what happened?”

Patton looked slightly hurt. “Well . . . we started shooting at each other. One of their guards fired at one our guards. They claim it was the other way round, of course. Anyway, within twenty minutes we were fighting a regular pitched battle, right out there between our base and theirs.” He gestured toward the window.

“Can you fire guns in airless space?”

“Oh, sure. No problem at all. However, something unexpected came up.”

“Oh?”

“Only a few men got hit in the battle, none of them seriously. As in all battles, most of the rounds fired were clean misses.”

“So?”

Patton smiled grimly. “So one of our civilian mathematicians started doodling. We had several thousand very-high-velocity bullets fired off. In airless space. No friction, you see. And under

low-gravity conditions.” They went right along past their targets — ”

Recognition dawned on Torgeson’s face. “Oh, no!”

That’s right. They whizzed right along, skimmed over the mountain tops, thanks to the curvature of this damned short lunar horizon, and established themselves in rather eccentric satellite orbits. Every hour or so they return to perigee . . . or, rather, periluna. And every twenty-seven days, periluna is right here, where the bullets originated. The Moon rotates on its axis every twenty-seven days, you see. At any rate, when they come back this way, they shoot the living hell out of our base — and the Russian base, too, of course.”

“But can’t you . . . ”

“Do what? Can’t move the base. Authorization is tied up in the Joint Chiefs of staff, and they can’t agree on where to move it to. Can’t bring up any special shielding material, because that’s not authorized, either. The best thing we can do is to requisition all the computers we can and try to keep track of all the bullets. Their orbits keep changing, you know, every time they go through the bases. Air friction, puncturing walls, ricochets off the furniture . . .

all that keeps changing their orbits enough to keep our computers busy full time."

"My God!"

"In the meantime, we don't dare fire off any more rounds. It would overburden the computers and we'd lose track of all of 'em. Then we'd have to spend every twenty-seventh day flat on our faces for hours."

Torgeson sat in numbed silence.

"But don't worry," Patton concluded with an optimistic, pro-

fessional grin. "I've got a small detail of men secretly at work on the far side of the base — where the Reds can't see — building a stone wall. That'll stop the bullets. Then we'll fix those warmongers once and for all!"

Torgeson's face went slack. The chime sounded, muffled, from inside Patton's desk.

"Better get set to flatten out again. Here comes the second volley."

—BEN BOVA

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# **THE SINCEREST FORM**

**by J. W. GROVES**

ILLUSTRATED BY COWLES

## **I**

**W**hen Bettycee saw what the men were doing at the spaceship her first reaction was characteristic. Oh! she thought. Tomcee shoukdn't be helping. Not in his condition.

Then the full significance of what they were up to hit her. She gasped, and listened for a moment to their incredible conversation. Panic-stricken, she squealed and, thankful for the adaptability of a truly human body, flattered for herself the six-foot long legs of an ostrich-toad. With huge strides she raced

across the heathery slopes of Berlin and round the wooded base of the hill, New York, back to Bettyaye and Bettybee. She dropped down to her normal height and breathlessly gasped out the news.

Bettybee blinked. "Satan finds mischief for idle hands to do!" she exclaimed indignantly.

Bettyaye drew herself to her full height. She was, naturally, a tall blonde with greenish eyes, as all women have been since the human race began. But she was sterner and fiercer than the other two, and the staunchest upholder of the ancient Beliefs.





"It's that filthy science of theirs, and that ridiculous Arrhenius theory," she said. "It leads them further and further into lies and other unrighteous things every day."

Bettycee nodded, but she was herself. It had been her duty to tell the others about the men, of course. But she wished there had been some way of avoiding it. She knew only too well what it would lead to.

She spoke timidly. "Perhaps — well, it doesn't excuse the men for shifting things, of course, but I mean they could be right about a second spaceship, couldn't they? If it were bringing Somebody and his watt."

"Somebody!" said Bettyaye impatiently. "That's the only part of the Beliefs you ever think about. Anyway, did anybody ever say anything about Somebody using a spaceship to come?"

Bettycee shook her head miserably. Nobody ever had.

"Watt can't be cured. Must be endured," said Betybee cryptically.

"Well, all I meant was—" began Bettycee. But she was wasting her breath. The other two had already gone.

She caught them up just as they reached the spaceship. The men were well forward with their work by now. One instru-

ment, made of twisted metal, was out on the grass, and they were just lifting another, consisting largely of shattered crystal, through the spaceship entrance.

Bettyaye raised her voice to a scream. "How dare you! Put them back at once!"

Tomaye looked at her haughtily. "We need both the telescope and the radar for observing the second spaceship."

Tombee nodded. "That's a known scientific fact," he said.

Bettycee blinked. Everybody inherits ancestral memory from Original-Betty and Original-Tom, of course; but at times Bettycee suspected that she had acquired more of it than other people had. She felt quite sure that a radar and a telescope ought to be a lot less crushed and broken than that if you were going to use them for observing things. Still, the men were scientists. So perhaps they liked to have scientific instruments around them while they worked, even if they couldn't really observe with anything but their eyes.

Tomcee spoke gently. "We are doing this as much for the good of your sex as ours, really," he said.

Bettycee's heart warmed for him. There he was — still working much too hard for a man in his condition — and yet he found

time to be considerate and think of other people.

Bettybee did not share her sentiments. She sidled up to Bettyaye, then glared at Tomcee. "The road to hell is paved with good intentions," she snapped.

That anybody else had managed to speak at all so far was due only to the fact that Bettyaye had been choked into silence by indignation. Now she recovered a little. "The whole idea of a second spaceship is sheer blasphemy!" she screamed. "And taking things out of the one and only spaceship is sacrilege. Your pretended belief in this disgusting Arrhenius theory doesn't excuse either."

Tomaye bristled, and did his best as a mere male to out-bawl her. "Old, discredited superstitions must always give way before the needs of scientific investigation!" he yelled.

Tombee nodded solemnly. "That's a known scientific fact," he concurred.

Bettycee groaned inwardly and tried to shut her ears to all of it. It had all been gone over so often before. Over and over and over again ever since the human race began.

The women were Believers, holding fast to the ancient faith in a single, uniquely-created spaceship that had by divine

command been sent from Original-Earth to Earth, in order to found the human race. And although it was Bettyaye that did most talking about it, Bettycee's belief in this was as deep and profound as anybody's. Indeed, among the ancestral memories that had been passed down to her was one quite distinct one about Original-Betty being on Original-Earth. And Original-Earth, it seemed, had even had places on it called New York and Berlin and London; though they were not nice places like the real ones, but rather nasty spots full of piled-up stone and metal and noisy rushing machines.

The men, however, refused to accept any of this. Strictly scientific, they were dedicated to the Arrhenius theory that space was filled with a number of life-spores, or ships, each with its own cargo of would-be flattered-ones like Original-Tom and Original-Betty, that were driven onward by the pressure of light until by chance one of them crashed on a suitable planet.

And really, thought Bettycee, although it's quite a stupid idea I don't see why the men shouldn't keep it if it amuses them. I really *don't* see why we've got to wait for Somebody to come with his watt before we stop quarreling about it.

She blinked, realizing suddenly that the men had finished talking and were acting. They had shouldered the radar and telescope and were marching off with them through the trees across the heathery slope of Berlin towards the hill, New York.

Bettyaye, white-faced from shock, took action herself. She left the side of the other women, ran round in front of the men and threw her arms wide, sacrificing half her body weight to gain extra spread.

"Stop! In the name of the flattered-ones, stop!"

The men marched forward. Bettyaye held her ground. Then a pointed piece of metal sticking out from the radar poked at the middle of her chest, forcing her to grow a hole to accommodate it. She squealed and wriggled aside. The men went straight on.

As Bettyaye began to flatter herself the strongest vocal cords and longest tongue ever, Bettycee turned and ran off through the trees. She just couldn't bear to know what happened next.

## II

After running for a while she slowed down, but she went on walking around on her own for a long time, trying hard not to think about anything.

Then, gradually, she drifted back. After all, she had to know what had happened, however dreadful it was.

She found Bettyaye and Bettybee standing before the Ship, talking. The men were nowhere to be seen. Bettyaye looked up as she approached, and spoke scornfully.

"So there you are."

"Time and tide wait for no man," said Bettybee.

"Don't they?" said Bettycee.

"No," snapped Bettyaye. "Do you realize that the men have already got the telescope and radar in place on the side of New York and we haven't even started our preparations yet?"

"Oh," said Bettycee. She thought of something that had not occurred to her before. "What makes them feel so sure that a second spaceship is coming now?"

Bettyaye snorted. "Tomaye claims to have seen something up there; and to know it's a ship just because it changed direction. According to him no inert object following a natural orbit ever does that, though how much he knows about it—"

"Sticks and stones may break my bones, but names never hurt me," interrupted Bettybee.

Bettyaye nodded. "You're right. It's a waste of time just telling each other what we think

of them. We've got to do something."

Bettycee blinked. "But — but what can we possibly do?"

Bettyaye glared at her. "Not everybody has spent their time in the woods sulking," she said. "We've got a plan." She began to speak more briskly. "You're the best of us at doing out-of-the-way flatterings, so you'd better play the would-be. Nobody knows how one should look, so it doesn't matter what shape you take so long as the men don't recognize you."

Bettycee's head was beginning to whirl. "But why shouldn't they recognize me? I mean, Tomcee might—"

"Don't be stupid," snapped Bettyaye. "If they recognize you when you walk down to them we will have wasted our time pushing the observation dome up so that it shows above the top of New York. They'll know it's only the old one that's been shifted, not a new one that's just arrived."

"Where ignorance is bliss, 'tis folly to be wise," said Bettybee.

"Exactly!" Bettyaye nodded triumphantly. "And the more blissfully ignorant we can keep the men, thinking that a second ship and another would-be flattered-one have proved their Arrhenius theory, the bigger fools they will look."

Bettycee started to understand what it was all about. "Oh!" she said. "Oh, but I think—"

"Well?" said Bettyaye ominously. "What do you think?"

Bettycee gulped twice, and tried to find enough courage. But it was no good. She just couldn't say it. Not to Bettyaye's face.

When she wandered off into the woods for the second time she wasn't running away again. Not because she didn't want to, but because she knew it would be a waste of time. She'd been allowed this break only because everything was ready except the men. They, it seemed, were not expecting their second ship just yet, since they had left the telescope and radar and wandered off somewhere.

Bettycee didn't know where they had gone, but she hadn't left the other two women very far behind when she heard the rumble of Tomaye's voice, and Tombee's assurance that that was a "known scientific fact." She turned aside. She didn't want to talk to those two now.

When she saw Tomcee sitting alone in a little copse she told herself that she didn't want to talk to him either. But somehow she found herself walking up to him. He looked up and smiled

as she sat down. "Hello, dear. I'm glad you've come. I've been wanting to talk to you about something."

"Have you, darling?"

"Yes. This thing that's going to happen to us soon." He blushed faintly. "Don't you think it's rather beautiful that two such things should occur at once? That, and the coming of a new race to this old planet Earth."

Bettycee couldn't remember ever having felt so wretched before. Oh, the poor darling? He really believed it! It was too cruel.

"Look, Tomcee," she began miserably. "Don't build your hopes up too much—"

"Why not?"

Misery made Bettycee reckless. Frantically she tried to keep all thoughts of Bettyaye out of her mind. "Well, supposing—I mean just supposing—somebody was playing a trick on you."

"A trick?"

"Yes. Trying to make something look as if it was so when it wasn't, just to alter your beliefs and things."

Tomcee smiled tolerantly. "But that's the advantage of science, my dear. We don't have Beliefs. All our conclusions are based on the application of reasons to observable data. Nobody could play a trick like that."

"Oh. But what if a—"

Tomcee interrupted rather more forcefully than was usual for him. "Please let's leave that subject, my dear. We haven't a lot of time before the ship comes, and I want to talk about something sensible."

"Sensible? But— Oh, well all right."

"Fine." Tomcee leaned back on his hands. "Now, flattery in the animal kingdom is random. A newly born flatterer flatters the first creature it meets. But only human children are allowed to flatter human beings."

"Everybody knows that."

"Certainly they do. But my point is that according to the Arrhenius theory the would-bes in a life-spore must be essentially human, whatever their shape."

Bettycee was used to being sat upon, pushed around or ignored. But for the last hour she seemed to have been getting a far greater concentration of such treatment than usual. Her voice felt as if it was going to choke her. "What do you mean?"

"Come, my dear," said Tomcee rather impatiently. "Surely it's obvious what I mean."

"I suppose it is. You really do mean that you—you'd let our babies and the would-bes in the second ship—?"

Tomcee nodded, smiling. "I

feel it would be a great gesture of hospitality." Then he blinked at her. "What's the matter? Don't you like the idea?"

Like the idea? What was the matter with him? If there really had been a second spaceship goodness knows what the would-be flattered-ones on board might have been. Things with three heads, perhaps, or tentacles. And he would actually have taken advantage of the innocence and helplessness of his own children to let them flatter the horrors and turn into — well, just anything!

Suddenly everything seemed to hit Bettycee at once. All the years of quarrel, quarrel, quarrel. Then the men taking things out of the Ship, and Bettyaye's silly, spiteful trick. And finally this suggestion from the man she loved and admired. The choking sensation was worse than ever now, and something seemed to burn inside her. Somehow she found herself on her feet, with no clear idea how she got there. Why! She thought with surprise, this is how Bettyaye feels all the time. And it's — no, not nice exactly. But satisfactory.

She glared down at her husband, and forced herself to speak gaily. "Why, whatever made you think I didn't like the idea?" she said. "It's grand. You go ahead

and do it as soon as you get the chance." And she turned and ran away from him.

Naturally, being Bettycee, now that she had made a move of her own and improved Bettyaye's plan beyond measure, she had not run more than a hundred yards before she found herself wishing that something would happen that would put a stop to the whole thing.

In her present mood, though, it would have seemed the most incredible thing in the universe that any wish of hers should be granted. So when it happened she simply did not realize it. She was conscious only of a loud thrumming sound that seemed to come from far overhead. Ignoring it, she ran on.

### III

By the time she got back to Bettyaye and Bettybee the new feeling that Tomcee had invoked had left her completely. She listened meekly and contritely while Bettybee commented sniffily about many hands making light work. She cringed while Bettyaye snapped agreement, and then demanded peremptorily, "Just what have you been up to?"

"I — I've only been talking to Tomcee," said Bettycee. Then she added hastily, "Oh, no, I

haven't given anything away. In fact I might have improved things." And she spilled out the story of her husband's suggestion and her reply.

Bettyaye seemed almost mollified. "Oh, well, that's all right. I suppose. Anyway, Bettybee and I have got the dome free so that you can get it to the top of the hill on your own. Now we two will go round and talk to the men. When you are ready push the dome up to where they can see it, and then come down to them and announce yourself as a would-be and—"

Bettycee was still wishing fervently that something would happen to stop all this. Vaguely, too, she was wishing what she had wished so often before, that something — anything — would stop Bettyaye talking.

Yet even now, when both wishes were granted simultaneously, she was not aware of it at first. She only knew that suddenly her ears were being tortured by a thunderous roar, and that a circular patch of light was leaping at an impossible speed across the land.

She reached the shelter of the nearest bush in the same fraction of a second as the other two women, and cowered with them for the heart-thud's time that the monstrous shadow

took to pass over. But when the roar ceased abruptly she was the first on her feet, the first to see the brand-new spaceship that had landed on this side of New York, its sparkling observation dome raised high above the brow of the hill, where the men would plainly see it from the other side.

Her initial reaction was a lightening heart. It was real! It had actually come! Tomcee was right and Bettyaye was wrong, wrong, wrong!

That lady was not disposed to admit the fact so easily. She crawled out from under the bush took one look, and whimpered, "It's a trick the men are playing. It's got to be."

Bettybee sat up and blinked. "Seeing's believing. The proof of the pudding is in the eating."

Bettycee looked down at them. Seeing Bettyaye humiliated like this had done something to her. Somehow her chest seemed to be ten times its usual size, though she wasn't flattering a thing except her normal self. And the feeling that surged through her now wasn't even Bettyayish. It was something bigger, stronger and better.

"Get up," she said.

Bettyaye gaped at her. "What?"

Bettybee shivered and crouched lower "Discretion is the better part of valor."

"I don't care what part it is," she said. "Bettyaye, Tomcee and my family are in danger. Now we've got to find out whether it's Somebody or a would-be in that ship. And if it's a would-be we've got to keep it from meeting the men until it's been found by a wild flatterer."

She turned and set off across Berlin, not bothering to look behind her. Bettybee followed immediately. Bettyaye hesitated, but not for long.

The spaceship, when you got close to it, was a crude, raw-looking thing compared with the original one. There were no pretty-colored lichens growing out of its seams, no delicate purple and primrose ivies trailing over it. And its surface was just harsh, glaring metal without a single streak of warm, brown encrustation.

The three women hid themselves in a small clump of trees to watch; flattering a few branches and leaves to give themselves extra cover. After a second or two a round hole opened in the side of the ship and something came out. Or, more accurately, some Thing came out.

#### IV

It didn't have three heads, and there were no tentacles; but the very subtlety of its freak-

ishness made it the more horrifying. In a lumpish sort of way it was shaped like a man. Two arms, two legs, a head. But it was nearly two inches too short for a true human male, and its coloring was utterly, revoltingly wrong. Blue eyes and bright red hair.

As the Thing walked away from the ship there was a crackling sound, and a blue light flowed all around it. The grass at its feet steamed, then flamed, but the Thing walked on unharmed.

The Thing started to walk away from the ship. As it did so Bettycee, partly recovered from her shock at its appearance, noticed a metal plate strapped to its shoulder. Ancestral memory flashed the word "radio" to her, but she had no idea what it meant. Suddenly the plate spoke.

"We'd better test the shock-field."

The Thing answered grumpily from its mouth. "Do you have to test it every single time we land?"

"It's there," said the plate,

"For a purpose I like. To burn the ears off any bug predator that takes a fancy to wander in to the ship. And since regulations say it's to be tested, tested it's going to be."

The Thing's mouth said, "I've got a feeling that if ever one of



these tests fail it'll be the protective suit that doesn't work, not the field."

As it spoke there came a crackling sound and a blue light flowed up and out, enclosing the ship like an umbrella-top. Where the light touched the ground the grass steamed, then flamed. But the Thing just walked on.

Betty whimpered, "What a nasty way for a spaceship to behave!"

"It didn't hurt the would-be, anyway," said Bettycee.

Having seen the Thing she put all thought of Somebody and his watt out of her mind. "Now," she said, "flatter up all the ugly things you can think of and—oh!"

Her stomach felt as if it were flattering a big stone and dropping right out of her. Tomaye and Tombee were coming over the top of the hill already, before she had had time to scare the would-be away, or anything! Almost she reverted to the old Bettycee, but she made herself keep calm. At least Tomcee wasn't here yet.

The Thing began babbling nonsense out of its mouth. "Humanoids, you said. These people are genuine humans, or I've never seen any."

The metal plate said, "Looks like it. But—I don't know. Go carefully."

Tomaye stopped in front of the Thing. "Welcome, would-be," he said formally.

"Well—uh—hello," said the Thing from its mouth.

"That's a known scientific fact," said Tombee.

"Uh—is it?" The Thing dropped its voice. "They talk galacspeak. They must be human. But something's screwy."

"Yeah," said the plate. "Watch out about a hundred yards to your left. Three females coming out of some trees."

Bettycee was rather surprised. She didn't see how the plate knew, since it didn't have any eyes. She stopped just clear of the trees, and extended an arm to hold the other two women back. Until she found out where Tomcee was and what he was up to it was difficult to know what to do for the best.

Tomaye said to the Thing cheerfully, "Don't worry. You won't have long to wait."

"That's—" began Tombee.

"You, I know," said the Thing's mouth. "That's a known scientific fact."

Tombee looked nonplussed. The plate said, "I'm beginning to remember something. How well did the hypno-course on space-history take on you?"

"Not too well," said the mouth.

"Nor on me. But I recall that

back in the early days there was a wreck out this way somewhere. A married couple. Their pictures struck me when I learned about them what a well-matched pair they must have been. He was an out-planet ecologist and a thorough agnostic. She was a fundamentalist, out to bring the message to any new races that might be around."

The Thing's mouth chuckled. "Nice recipe for a happy marriage. You reckon these are their descendants, degenerated into idiocy?"

"Maybe. But — watch out. Here comes another one."

Bettycee had been trying to make sense of the Thing's queer duo-monologue. Now she gave up. Tomcee was coming over the top of New York. He was holding his arms straight out in front of him, and his hands were cupped.

Bettycee's heart warmed for him so fiercely that she nearly sobbed. So that was why he had not been with Tomaye and Tombee. His time had come upon him. And she had not been there, and oh! she should have been. When a man first becomes a mother he needs above all to have his wife by his side.

She stretched her neck a little so that she could look into his hands. There they were, the little darlings! Two of them, writhing

their sweet green heads forward, blindly seeking something to flatter in the manner of babies since time began.

Bettybee said abruptly, "As the twig is bent the tree will grow."

The words pierced the warm glow of fatherhood that had been enveloping Bettycee and brought her back to reality again. She remembered with a swift surge of horror just why Tomcee was here. Fear almost choked her for the moment, and then she forced out a scream.

"No! No, Tomcee darling. Please don't."

He turned his head and blinked at her in surprise. "But I must, my dear. Remember, I didn't only make the promise to you, but to this poor, stray would-be as well. Have we the right to deprive it of its high destiny now?"

The Thing had fallen back a couple of steps, and had been jerking its head from side to side as she and her husband spoke. Tomcee stepped towards it, arms extended.

Bettycee screamed again. She knew she could not possibly get there in time. Tomcee's babies were already lifting themselves up out of their mother's hands. But despairingly, using every ounce of herself that she could

spare, she swept upwards on enormous legs and leaped forward.

The Thing screeched from its mouth and yelled from its plate. "So *that's* it!" And it jabbed a hand into its clothing and jerked out a metal tube. Something flattered thunder, and—

And then the universe went utterly, utterly mad. Madder than it had gone when the second ship turned up. Madder even than it had gone when that pseudo-human abortion had walked out of it. For, abruptly, one by one, everybody began to stop being there. Or, more accurately, they began to be everywhere at once.

First poor Tomcee and his children went, great gobs of them flying outwards, and spattering all over New York. Then Tomaye followed, and Tombee, and Bettyaye and Bettybee—

Bettycee had never seen such a thing happen to anybody before, but instinctively she knew it must be quite unpleasant. Suddenly she was feeling more Bettyayish than ever she had. In mid-leap she switched substance from her legs to her arms. The thunder-flattering tube had finished with everyone else and was rising towards her. She snatched it and tossed it behind

her, then whipped out an arm to cord-like proportions and wound it round and round the Thing.

"You — you beast!" she panted. "Why did you do that? You don't deserve to be flattered at all."

The Thing's mouth began to scream. "Help! It's disarmed me. Turn the ship's guns on both of us before it changes me!"

The plate said, "Don't panic, you fool. It's an adult. Only an unchanged young one can take you over."

Bettycee took no notice of the noise. Now that she had got the Thing she wasn't quite sure what she wanted to do with it, but an inherent sense of justice made her feel that it ought to have something nasty happen to it after the way it had treated everybody else. With her spare arm she flattered the claws of a warrior beetle, and gave its nose a quick pinch.

Its mouth yelled, "Hell! It's pulling me to pieces now. Get me out of here!"

The plate said, "All right. I'll lift ship and yank you both up to me with the anti-grav. The shock-field will shake the brute off, and you'll be safe inside your protective suit."

"Fine. Only hurry up."

It was a shock to Bettycee when suddenly the ground start-

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ed to fall away beneath her. But she refused to let it show. "You needn't think you're going to frighten me into letting you go by playing silly tricks like this," she told the Thing crossly.

"No?" said the Thing's mouth as they sailed upwards. "You wait till you get a billion watts of shock-field burning you up! You'll let go."

"I won't," said Bettycee.

And then she stopped, unconsciously tightening her grip. "What did you say?"

The Thing seemed to be getting into a panic again now. "Hell, don't crush me to death. I didn't mean it — I mean—"

Bettycee shook it to calm it. "Stop blethering. You said something about a billion watts."

"Yeah, sure. But—"

Bettycee gave a little squeal, and blanked her mind to the Thing's sputtering. I must be steady, she warned herself. I mustn't build my hopes up too high, or it will be such a let-down if I turn out to be wrong. But after all, the only reason we thought this Thing couldn't be him was because it is so ugly. Yet, if you come to think of it, Original-Tom never said he would be nice-looking.

Desperately she tried to check. One — how did it go? One, three — or was it five?

— It was no use. Generations of being able to flatter up as many fingers as you liked had made counting forever a last art.

Bettycee shook the Thing again. "Tell me the truth. Are you really Somebody, or aren't you?"

"S — somebody? What the heck do you mean?"

"The billion watts. Is a billion a big enough number?"

"Big enough — ?"

"Big enough to include number four, stupid!"

The Thing, white-faced, gaped at her as if it had lost its senses. "Well, sure it is. But—"

"Then you *are* Somebody," interrupted Betty, squealing with delight. "Oh! how marvelous. But why — ?"

At that moment they hit the shock-field. The blue light half blinded Bettycee, and the burning hurt more than she had expected; but when it was over she forgot it. Falling Earthwards she had to flatter a 'chute-seed so that she could land safely, of course; but she had enough of herself left over for a tiny voice-box with which to croon happily as she went down.

## V

As she dropped the last hundred feet the Thing sat in the ship far above her, facing a

slightly larger Thing as monstrously shaped and colored as itself. "Imitators!" it was saying angrily. "And you tell me the Council will only put the planet off limits? It ought to be dusted clean."

The larger Thing spoke, oddly, in a voice just like the one that had come from the smaller ones plate. "Not worth the bother," it said. "They're no menace."

"No menace? When they can imitate a man exactly, know everything that's in his brain?"

"Only occasionally, when a once-in-a-thousand-years shipwreck happens. And they soon lose the start that gives them."

"Yeah?"

"Yes. Any human — or fake human — brain forgets things and falsifies memories. When the imitators breed their young, with no more humans around to copy, imitate their parents, taking over the distorted memories just as they are. Then they go through life adding further alterations, and pass them on in turn."

"I see."

"Sure. And that's not all of it. While the memories are going, character traits are going too by the same process. If a number of imitators copy the same man they start off alike. But after a few generations you have a

group of differing individuals, one or two facets of the original's character."

The smaller Thing nodded, and exhaled noisily. "Oh well, that's a relief."

The ship went on and on. As it entered its second light-year out from Earth, Bettycee relaxed against the bole of the tree from which she was ingesting bark and looked round at the rest of the human race.

She wasn't quite herself again yet; but most of her was there. The others had done their best to pull themselves together as well, but large chunks of them had been blown too far away. Each of them was going to have to do quite a lot of eating before he or she could return to human form all at once.

"All right," said Bettycee dialectically, continuing a discussion that had been going on ever since she got back to Earth. "It's agreed then that the body of our knowledge be called Scientific Beliefs, or Believer's Science."

Bettyaye had been concentrating on being a mouth and stomach and one small ear. Now she stopped gulping in the grass long enough to flatter up a voice-box. "The word Believers should be first."

"For women," said Bettycee. "Believer's Science for women,

Scientific Beliefs for men. And both sets of knowledge to be exactly the same. Now, about the Arrhenius theory—"

Tomaye had found himself a wriggly-ants nest. The speaking-tongue that he flattered up quivered in sympathy with its hunting companion. "Ar — Arrhenius unassailable — c — can't permit — modifications—"

Tombee, wrapped around a piece of tree-stump that was really too large for him to consume in his present size, said, "Thas non scient'ficac."

Bettycee said, "Don't argue, please. I was the one who met Somebody, and he gave me a billion watts. A billion includes number four. And you all know what getting number four means."

Everybody fell silent. Although nobody had wanted to think about it much in the old days the ancestral memory was still there, bright and clear.

After Original-Betty had been flattered, Original-Tom had gone on indulging in love-play, darting away here and there pretending it did not want to be caught. Finally the three who had founded the male side of the human race had got it cornered. It had stood still, trembling ecstatically in anticipation.

"So that's it," it had said. "What my wife would inevitably

have called the sincerest form of flattery, I suppose." It had sighed. "Funny. I'd become resigned to the fact that arguments between Betty and me would never finish while we were alive. But I did think they'd end when we died. Now I suppose they will go on and on until Somebody comes and gives you creatures watt four—"

Tomaye's voice, though still jerky, was almost humble. "All r — right. W — what is the Scientific Belief about the Ar — Arrhenius theory?"

"Space is filled with life-spores pushed outwards by rays of light," said Bettycee. "But space is small enough for there to be only two spores, the one that founded the human race and the one that brought Somebody."

"And if another spaceship comes?"

"Then we'll run away and hide."

Unimaginably far away, the smaller of the two Things in the ship was making fine adjustments to a series of vernier dials beneath a large screen. Suddenly a picture of the human race sprang into being. The Thing counted.

"All there," it said. "Bits of them, anyway. Oh, well. Since they're harmless I don't begrudge it to them."

Back on Earth, Tomcee snuggled up to his wife, cooing softly. Since he had taken the first, direct shot it would be many, many meals before he and his children could do much else but snuggle and coo. But his action was enough to remind Bettycee that there were other things for a leader to do besides recodifying Beliefs.

"Now, about children," she said.

"Children?" said Bettyaye.

Bettycee nodded. "Some of us can only talk in certain ways, some of us talk too much, and some of us only want to argue. But there's one thing we can all do. We can all think wise and beautiful thoughts if we try. In future, any children that are born will not be allowed to flatter their parents immediately. They will be held off until their father and mother are quite, quite sure they are thinking the wisest and most beautiful thoughts they possibly can."

Despite his limited resources Tomcee managed one word. "Nice."

"Yes," said Bettycee complacently. "And I'm going to think of lots more ways of making things nice, too."

Up till now Bettybee had been

concentrating wholly on a tasty piece of fern-root, leaving discussion to others. This opportunity, though, was too good to miss. Hastily she began the necessary conversion.

Aloft in the ship the picture on the screen was beginning to shrink and fade. The smaller Thing leaned closer to peer at it. "You know," it said, "Even now those brutes must remember something of the old quarrels. Wonder what sort of a life they are making for themselves these days?"

Far below Bettycee repeated herself dreamily. "Lots and lots of more ways of making things nice."

Bettybee finished her new flattering. Hastily she appraised her fresh resources. Tongue, vocal cords, lungs. Yes, they were all there. Happily she gave forth. "And then," she chortled, "And then they all lived happily for ever and ever after. Yippee."

The larger Thing scratched its chin thoughtfully. "What sort of a life those brutes are leading now?" it said. "I don't suppose we shall ever find out."

And alas! poor Things, they never did. — J. W. GROVES



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